

# Federal Energy Regulatory Commission

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**Case:** In Re: State of the Natural Gas Industry Conference

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BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION

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STATE OF THE NATURAL GAS : Docket Number

INDUSTRY CONFERENCE : AD07-15-000

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Hearing Room 2C  
Federal Energy Regulatory  
Commission  
888 First Street, NE  
Washington, D.C.  
Tuesday, November 6, 2007

The above-entitled matter came on for conference,  
pursuant to notice, at 9:40 a.m.

Present: Chairman Joseph T. Kelliher  
(presiding), Commissioners Jon Wellinghoff, Suedeen G. Kelly  
and Philip Moeller.

1 P R O C E E D I N G S

2 CHAIRMAN KELLIHER: Good morning. Welcome to the  
3 Natural Gas Conference.

4 We are going to take a broad look at the state of  
5 U.S. natural gas markets, which is essentially what we've  
6 done in the past. Sometimes we've had a more targeted view  
7 of a specific issue. Today, we're going to take a broad  
8 look at the state of the U.S. natural gas markets and I look  
9 forward to hearing from the experts we have assembled today.

10 But before we hear from the experts, our  
11 inexpert remarks, I think this conference is very timely. I  
12 think at this point, the U.S. natural gas markets are  
13 undergoing a fundamental change. To begin with, I think we  
14 use the term U.S. natural gas market frequently, but I think  
15 it's actually somewhat of a abstraction. I think the market  
16 is really North American rather than national.

17 The market ceased to be national when U.S. gas  
18 production no longer suffice to meet U.S. demands. We rely  
19 on Canadian imports to make up the difference. However, we  
20 are now at the point when North American gas production is  
21 inadequate to meet North American demand.

22 U.S. gas producers have very impressive success  
23 developing new reserves in the lower 48. However,  
24 production in other areas has declined. And overall U.S.  
25 gas production remains roughly flat while Canadian imports

1 decline and demand continues to rise.

2           There will be a great deal of pressure on  
3 demands, too, as more and more natural gas will increase in  
4 generation in years to come. I think that is more likely to  
5 be the scenario if you look at the U. S. electricity supply  
6 going forward. Given the uncertainty of our climate change  
7 policy, we probably will continue to rely on natural gas  
8 perhaps unduly for the next ten years or so.

9           The reality is that liquefied natural gas, LNG,  
10 is the fastest growing source of U.S. natural gas supply,  
11 and will remain the case for the foreseeable future. So,  
12 our gas market has totally become less, are becoming less  
13 North American and more national. I hope the panelists will  
14 discuss the implications of that change today.

15           I think the United States has done a good job in  
16 authorizing increased LNG import capacity, but increased  
17 import capacity does not equal increased imports. We're in  
18 competition with other importing regions of the country who  
19 are LNG supplies and we're to predestined to win that  
20 competition.

21           The United States has certain advantages and  
22 disadvantages in that competition. Among our advantages, we  
23 have significant gas production. Most of our competitors  
24 don't have significant gas production, with the U.K. being  
25 an exception. We also have very significant underground

1 storage capacity, which is far greater than any of the other  
2 LNG importing countries.

3 We also have a robust pipeline network. The  
4 most expansive in the world. We also have access to both  
5 the Atlantic and Pacific LNG markets. At least, we will  
6 when the Semper project in Baja begins operation. We also  
7 have a very transparent gas market. Our principle  
8 disadvantage is the aversion of U.S. gas purchases to enter  
9 into long time supply contracts for LNG.

10 Frankly, I don't see that FERC has a great  
11 ability to encourage buyers to enter into long term  
12 contracts. I believe our state colleagues actually have a  
13 far greater ability to encourage gas utilities to enter into  
14 long term contracts and urge them to provide sufficient  
15 regulatory certainty.

16 To be clear, I don't think there's competition  
17 among the North American countries for LNG imports. I  
18 really think it's more of a question of North American  
19 competing with Europe and the Asian Pacific nations for  
20 imports. But I think our success in that competition is  
21 vital to our energy security and it actually is vital to the  
22 prices that American consumers will pay for natural gas in  
23 the coming years. And it's very important to the prosperity  
24 of our country and to our economy.

25 Another development in our natural gas markets is

1 the convergence of the physical and futures markets.  
2 Lawyers probably see these markets as completely separate  
3 domains. But I don't think economists will see that. And  
4 consumers shouldn't see them as separate, either. I really  
5 don't think that these markets can properly be considered as  
6 separate markets. Prices in one market affect prices in the  
7 other. I think it's important the Commission understand  
8 the implications of that convergence.

9           Now, as these changes unfold, there do remain  
10 some constants. One constant is the need to develop an  
11 adequate natural gas infrastructure. This has been a very  
12 significant year for natural gas pipeline construction, as  
13 the Commission pointed out at the last open meeting. The  
14 Commission has approved more pipeline expansion this year  
15 than at any point during the last 15 years with the  
16 exception of 2001.

17           As domestic production shifts and LNG imports  
18 rise, we face continued need for new natural gas  
19 infrastructure. This is another area where if we're  
20 successful in developing the U.S. natural gas  
21 infrastructure, it will be to the benefit of consumers.

22           I look forward to hearing the views of the  
23 panelists today. I would like to turn to my colleagues to  
24 see if they have any comments they would like to make.

25           Commissioner Moeller?

1           COMMISSIONER MOELLER: Thank you, Mr. Chairman,  
2 I'm looking forward to today's conference. And although we  
3 probably spend a good portion of our time at resources at  
4 the electric industry, nevertheless, the natural gas  
5 industry is just as important as electricity.

6           If you look at the number of generic proceedings  
7 that we're dealing with, it's certainly not a slow time in  
8 this industry, as well, from our perspective. Issues such  
9 as increasing price transparency, reforming Form 2,  
10 examining the issues of pipeline fuel retention, including  
11 the MLPs and the proxy groups; the standards, of course, of  
12 gas quality and interchangeability -- these are all things  
13 we have been spending time on and I'm very interested in.

14           It should also be noted that we haven't forgotten  
15 about the petitions that were filed last year by PG&E and  
16 Coral advocating changes to our existing capacity release  
17 regulations. One of my components is that as coal is  
18 becoming increasingly out of favor, the short term,  
19 immediate term and maybe even long term fuel of choice,  
20 depending on electricity, turns out to be natural gas.

21           My hope as a nation, we're well aware of the  
22 policy ramifications of that. We can't ignore it. And  
23 although we don't favor as a Commission, choosing fuels, we  
24 have to recognize the trends.

25           A few things we can do, we can construe our

1 improvements to be operational on natural gas markets,  
2 encouraging long term contracts as referenced by the  
3 Chairman. The development of new pipeline and restorative  
4 infrastructure projects to accommodate the gas supplies from  
5 these sources. And also as the Chairman noted, encouraging  
6 more imports of LNG to offset the risk.

7 That North American supplies will decline. This  
8 is important to me, and I look forward to all the panels  
9 having their views on it. I appreciate all the effort  
10 people made to be here today.

11 Thank you, Mr. Chairman.

12 CHAIRMAN KELLIHER: Commissioner Kelly.

13 COMMISSIONER KELLY: Mr. Chairman, I want the  
14 participants to know how much we appreciate the fact that  
15 you're here. We know you're busy taking time out of your  
16 schedules to come and share with us the expertise that you  
17 have is really a value to us.

18 Commissioner Moeller was mentioning that we  
19 spend a lot of time on electricity. It made me realize  
20 that 20 years ago when the markets for natural gas were  
21 just evolving, we had spent a lot of time on natural gas.  
22 In many ways, the evolution of that gas market has been a  
23 success story. We have certified out where those markets  
24 are trending and the implications for the American consumer.

25 So, thanks very much for being here.

1                   CHAIRMAN KELLIHER: Commissioner Wellinghoff.

2                   COMMISSIONER WELLINGHOFF: Thank you, Mr.

3 Chairman. I, too, look forward to the three panels today  
4 and I'm very interested in what we're going to hear. I'm  
5 very interested in the issue of efficient use of capacity  
6 of the system. I think one reason we focus more on the  
7 electric industry is because the gas industry is doing a  
8 pretty good job in this regard.

9                   And there may be something we can learn from the  
10 gas industry as to how they use these pipelines and the  
11 capacity in these pipelines and how that can maybe be  
12 translated over to the electric industry. But we need, I  
13 think, to determine how we can become even more efficient in  
14 the use and capacity and also more efficient in the delivery  
15 of natural gas.

16                   I'm looking forward to hearing all three panels  
17 in that regard. I do want to say, though, I'm  
18 unfortunately going to have to leave prior to the start of  
19 the third panel. I've got a meeting over at DOE. I hope we  
20 can make some accommodation for my legal assistant, Jim  
21 Peterson, to perhaps ask some questions. He's far more an  
22 expert than I am in natural gas.

23                   Thank you.

24                   CHAIRMAN KELLIHER: Why don't we turn to Jeff  
25 Wright to discuss the ground rules. Jeff's going to be the

1 bell prop at the meeting today and cut people off if they  
2 labor too long.

3 Jeff?

4 MR. WRIGHT: Good morning, Chairman Kelliher,  
5 Commissioners and panelists and attendees. I'd like to  
6 welcome you in today's State of the Natural Gas Industry  
7 Conference. My name is Jeff Wright, deputy director of  
8 FERC's office of Energy Projects.

9 Today, you'll be hearing from individuals who  
10 participated in all facets of the natural gas industry. As  
11 your Chairman stated, we will have three panel sessions.  
12 After delivery of prepared remarks, there will be an  
13 opportunity for the panelists to address each other. Other  
14 Commissioners may question the panelists, followed by staff.

15 Let me go over a few points. I will ask our  
16 panelists to please adhere to about a five to seven minute  
17 time limit for your prepared remarks. If you spill over, I  
18 may make an indication that you should wrap up. Please do  
19 not address any pending cases of the Commissioner.

20 Finally, breaks have not been built into the  
21 schedule, but please feel free to take your own break when  
22 you need it.

23 With that, I'd like to call upon the first  
24 panel. I'll note that this panel will address the changing  
25 nature of U.S. natural gas markets, specifically, what is

1 happening in domestic production and with regard to our  
2 North American partners, Canada and Mexico. And, also, are  
3 there are any non-traditional unforeseen demands for natural  
4 gas that will upset the U.S. demands, supply, balance?

5 We must today discuss these thoughts and other  
6 related ideas, are Kevin Petak, vice president ICF  
7 International, Porter Bennett, president and CEO Bentek  
8 Energy, LLC. And Stephen Harvey, director of the Energy  
9 Market oversights of the Office of Enforcement of the  
10 Commission.

11 With that, Mr. Petak?

12 MR. PETAK: Good morning, Chairman, good morning  
13 Commissioners, good morning FERC staff and good morning  
14 attendees. I have a brief presentation that I put together  
15 to kind of set the stage for this conference.

16 I think this is an excellent conference because  
17 the gas market is at a crossroads, I think. There are a lot  
18 of fundamental changes that are undergoing in the gas  
19 market. If we could bring up that presentation, I'll put a  
20 slide.

21 I think the first slide in this presentation  
22 kind of sets the stage for the whole conference. There's  
23 been a change in balance in the North American natural gas  
24 market over the last 15 to 20 years. That's the productive  
25 capacity within the market itself.

1           If you look at the chart on the left, it has  
2    been declining during that period. Production or gas  
3    demand -- or production to meet gas demand has actually been  
4    growing. That's the red curve below the blue productive  
5    solid line there. That shows productive capacity.

6           What we had around the late 1990s was a  
7    conversion of productive capacity and production. That's  
8    where the gas bubble of the 1990s burst. And about that  
9    time, we had no excess molecules of natural gas in the  
10   market place. Producers had been selling all their  
11   molecules of gas.

12           And it's about that time where the gas prices, if  
13   you look at the chart on the right, the gas prices went from  
14   the two to three dollar per MmBtu environment where there is  
15   little volatility in the market and they shot up into the  
16   ten dollar per MmBtu environment. That's where we saw the  
17   first spike in gas prices, and it was evident that the gas  
18   bubble burst.

19           After the year 2000, 2001, as I've said before,  
20   we've had no excess productive capacity. The markets  
21   switched from producers heading prices type of market where  
22   producers were willing to sell excess molecules into the  
23   market. And they're willing to put the price down towards  
24   variable cost in production from a market where demand or  
25   consumers who set the price of natural gas.

1           Basically, they're bidding secure molecules of  
2 gas away from each other because there's no excess  
3 productive capacity. That is characterized by the  
4 relatively high prices that we see, the \$5.00 plus per MmBtu  
5 gas prices that we see after the year 2000, and the  
6 significant volatility that we see in the market place.  
7 And the market is very subject to supply shocks or supply  
8 constraints in this type of environment.

9           For instance, in the hurricane Katrina, Rita  
10 year, the year 2005, there was one Tcf of gas, one trillion  
11 cubic feet of gas removed from the market cumulatively from  
12 September, October of 2005 through about September of 2006.

13           Now, that's the big downward spike that you see  
14 in the gas production and productive capacity in the chart  
15 on the left. About that time, we saw the spike in gas  
16 prices where gas prices spiked up in the chart on the right.  
17 Into the 12, 13 or 14 dollar per MmBtu range. That's  
18 characteristic of a market having a tight supply. And the  
19 market is subject to supply constraints.

20           We expect that ICF these supply constraints to  
21 continue in the market place. We expect the tight balance  
22 between supply and demand to continue. Therefore, we expect  
23 that a relatively high six dollar per MmBtu gas prices with  
24 significant volatility to continue well into the future.

25           Now, I think the demand is clearly going to be

1 better in the future.

2 Thirdly, you've got a lot of gas higher power  
3 generation in the United States over the last ten or so  
4 years. And a lot of those are originally underutilized  
5 waiting to generate to meet incremental electric load  
6 growth. The real question marks are will the supply be  
7 there to meet that demand and where does this supply come  
8 from.

9 If you look at this chart that I've put up here,  
10 there's a distant lines that I show. I am showing a bar  
11 chart where I've got the supply mix for the year 2006,  
12 supply mix for the year 2015 and the supply mix for the year  
13 2025.

14 What jumps out at me is the traditional  
15 basements that we've relied on are relatively material  
16 producing areas and those areas are likely to decline in the  
17 foreseeable future. Where does the new supply come from?  
18 It comes from a number of different sources. It comes from  
19 the Mid-Continent shales, for instance.

20 We've seen significant drilling activity in the  
21 Mid-Continent shales over the past five or six years.  
22 There's been significant growth in the Barnett shale, the  
23 Woodford shale, the Fayetteville shale. That's one of the  
24 areas that the light blue area on this bar chart that's  
25 significantly growing in the foreseeable future.

1           We've also seen at the top of the bar chart the  
2 Rockies, where supply has been significantly growing in the  
3 Uintah Peons, the Green River basin, and we expect those  
4 areas to grow significantly in the foreseeable future, as  
5 well as strong building activity is likely to continue in  
6 those areas.

7           There's a couple of brighter colored wedges  
8 here. There's LNG imports, there's the deep water Gulf of  
9 Mexico and Alaska gas, the Mackenzie Delta gas. Certainly,  
10 the deep water Gulf of Mexico was growing here until a  
11 couple of years ago. Then over the last year, year and a  
12 half, it stagnated a little bit. Part of that is because  
13 there's been very few new fields brought on line. We did  
14 see Independence Hub start up this year and we are seeing  
15 significant production come in from Independence Hub.

16           We do expect some incremental growth in the  
17 deeper waters of the Gulf of Mexico, which would generally  
18 offset declines in the shallower waters or the shelf of the  
19 Gulf of Mexico. Then there's LNG imports as I mentioned.  
20 We do see significant growth in LNG imports, and it's about  
21 time. Certainly in cubic feet of gas by the year 2025. The  
22 real question mark I think is will the capability be there.

23           Because I think as the Chairman mentioned, there  
24 is this competition between North American consumers and  
25 European consumers and Asian consumers. It's a question of

1 the adequacy of liquefaction capability development to meet  
2 all those market needs all around the globe.

3           Finally, there's Alaska gas and Mackenzie gas, no  
4 doubt about it. All these resources and supplies is very  
5 important incremental sources and supplies in the market.  
6 They help clear the market to reasonable gas prices.  
7 Without them, it is significant run up in gas prices in the  
8 outer years of this projection or you will see a requirement  
9 to bring in other incremental supplies. For instance,  
10 additional LNG imports on a market that may already be  
11 stretched to capacity.

12           One of the other questions that was posed for  
13 this panel discussion was likely to happen with the U.S.  
14 trade from Canada and Mexico.

15           What I show here is a bar chart. What you see is  
16 what the Canadian imports, which have recently been upwards  
17 of 3,000 Bcf per year, are likely to decline in the  
18 foreseeable future. This should be no surprise. If you  
19 look at all the analysts out there, many of the analysts  
20 that are out there with projections. The Energy Information  
21 Administration, the National Energy Board in Canada,  
22 certainly they are all showing declines in Canadian med  
23 exports to the United States. There's two drivers behind  
24 this.

25           The first is that Canadian sedimentally basin is

1 a relatively mature basin and the productive capacity is  
2 likely to decline in the foreseeable future there.

3 We have seen here in the last year significant  
4 Gulf and tooling activity. Here in the last two years,  
5 actually have been Gulf and tooling activity in western  
6 Canada. New drilling activity has dropped off about 50  
7 percent or so over that two year time period. Part of that  
8 is because the costs have run up significantly. And part of  
9 that is the value of the dollar is factoring into that.

10 But certainly those rigs are moving elsewhere  
11 away from western Canada. From a cost standpoint, those  
12 resources are not as competitive to development.

13 The second part of this equation is what's going  
14 on with western Canadian gas demands. Certainly we've seen  
15 there is significant interest in developing the oil sands up  
16 in the far northern reaches of Canada. Significant growth  
17 in the development of the oil sands and what's required to  
18 develop the oil sands? Natural gas. It's used in  
19 cogenerators, it's used to create the steam so the oil can  
20 be extracted from the rock.

21 If you have those two trends, declining  
22 productive capacity in western Canada and increasing gas  
23 demand in western Canada, then I think it's expected that  
24 the western Canadian imports to the United States will  
25 certainly fall over time, and this is quite a big decline.

1 By the year 2025, it's down to between 1,000 and 1500 Bcf.  
2 That's a 60 percent decrease. A 60 or 70 percent decrease  
3 to United States.

4 When you say declining demand of western care,  
5 that's increasing demand of western care. With respect to  
6 Mexico and our projection, you generally find that Mexico  
7 will meet a lot of its incremental gas needs over time. The  
8 LNG imports. Certainly Altamira is up and running within  
9 the last couple of years. Costa, the Costa Azul facility  
10 will be up and running within the next year. Then there's  
11 other facilities further south in Mexico that we think will  
12 be over time.

13 So, we think much of the incremental, Mexico's  
14 incremental need for gas will be met by LNG imports over  
15 time. It's about slots.

16 Are there any issues with the North American gas  
17 markets? I tell you what's been talked about a lot. This  
18 year, there's a number of different bills in Congress. Its  
19 carbon policy. That is the big wide part, I think, that's  
20 hanging out there for energy markets. Will the United  
21 States take on carbon policy?

22 What I show here on this chart is gas use.  
23 Three different carbon policy cases implemented over time.  
24 In all the cases, gas use goes up relatively significantly,  
25 as it does in our reference case.

1           In two of the cases, the expected and stringent  
2 carbon policy cases, the gas use is actually greater than  
3 our reference case. Particularly in the longer term. In  
4 the mild CO2 case, gas use is below, but, nevertheless, by  
5 the year 2025, the gas use actually rises above the expected  
6 case which does not have carbon policy assumed in it.

7           I think this is a wildcard for the natural gas  
8 market. If I had to summarize where I think the market is  
9 headed with carbon policy, it looks to me, and our analysts  
10 at ICF has carbon policy is likely to increase gas use.  
11 There is a chance there would be increased gas use in some  
12 of the milder carbon in prototype cases. But it's more  
13 likely in the longer term to increase gas use.

14           Certainly, I'm going out to 2025 here. There are  
15 some real issues in the much longer term with significant  
16 carbon reduction, to which more likely would reduce gas use  
17 in the much longer term as new technologies penetrate the  
18 market. Even with coal and carbon sequestration, you could  
19 have significant penetration of nuclear generation.

20           But a lot of other options can take place that  
21 providers of energy supplies could adopt in the much longer  
22 term.

23           With that, I'd like to thank you. That  
24 concludes my prepared comments. Thank you.

25           Mr. Bennett.

1 MR. BENNETT: Thank you and good morning. I  
2 appreciate the opportunity to be here.

3 My comments will focus on how the new technology  
4 pipelines, such as Rockies Express or REX, will play 52-card  
5 pickup with North American gas flow patterns and basis  
6 relationships.

7 I'm going to use the example of REX to illustrate  
8 my point. REX is about a 1.6 Bcf a day pipeline that will  
9 bring gas from Cheyenne to the upper Midwest market. Those  
10 markets are currently served by ANR, NGPL, Northern Natural  
11 and Panhandle Eastern from supplies primarily in the  
12 Anadarko and Permian basins. The gas flowing from REX into  
13 the Midwest market will move there because it's the lowest  
14 cost option. The price advantages of moving gas on REX will  
15 give customers in the Midwest about a two dollar price  
16 advantage over Anadarko and Permian.

17 Unfortunately, there are bottlenecks on each of  
18 the receiving pipelines that would prevent Rockies gas from  
19 entering the systems as incremental supplies. Almost all of  
20 the flow must -- all the gas that comes off of REX must be  
21 offset by reduced takes in the Anadarko and Permian.

22 Those volumes will be backed up into an  
23 intrastate market and then down to WAHA, where there would  
24 be likely price differentials, differential changes.  
25 Chicago prices will remain about the same. The Rockies'

1 prices will rise as there is more demand for the supply and  
2 Anadarko prices will decline because they now have limited  
3 export capacity. WAHA prices will decline more because they  
4 have much of the displaced Anadarko and Permian gas will  
5 move there.

6 Lower WAHA prices will pull San Juan prices down.  
7 Which means the gas which now flows south on Northwest and  
8 Trans Colorado is going to want to go north into REX and  
9 then move east. Next year when REX West opens, it's going  
10 to change the patterns pretty dramatically.

11 Now, let's look at what happens in 2009 when the  
12 second phase of REX becomes active. REX will move volumes  
13 across to the Ohio market, that's going to move to Ohio,  
14 past the upper Midwest. Because Ohio is going to provide  
15 the best netback to the producer-shippers. Capacity  
16 constraints east of Ohio mean that only about 600 million a  
17 day of the 1.8 Bcf a day that REX will bring can be absorbed  
18 into the northeast market. As a result, about 1.2 Bcf is  
19 going to get pushed back into the Gulf. This is going to  
20 cause gas in the Gulf to rise.

21 At that point, Anadarko and Permian gas moves  
22 back into the upper Midwest market. Some of the displaced  
23 gas that will fill from the northeast is going to move up  
24 the eastern legs of the pipelines and RNGPL into the upper  
25 Midwest to replace the camidium imports. Meanwhile,

1 lockees, mid continent gas will grow. Several pipelines  
2 will take this gas across the Gulf and into the southeast  
3 market. Those supplies will increase even more as  
4 independents and LNG increased.

5 Now, what happens to prices? Pries will fall  
6 relative to the rest of the country because of well lender  
7 supply. Midwest prices will increase. Rockies prices will  
8 increase. Anadarko, Permian and San Juan prices will likely  
9 rise again in a relative sense. Then the Gulf prices will  
10 probably decline and decline significantly.

11 We can debate the details, but it's clear that  
12 the development of this one 1600 mile long pipeline will  
13 cause a dramatic realignment of flow patterns and  
14 dramatically alter the basis relationships throughout the  
15 U.S.

16 Remember, REX is only one of several new  
17 pipelines that are large, very low cost relative to  
18 existing systems. In our opinion, the forward curves are  
19 not adequately depicting the changes that will occur.

20 This graph illustrates the gap between the way  
21 the forward group value competitive supplies at specific  
22 points and what we think they'll look like in the future.

23 The top graph compares CIG lockees, the  
24 Panhandle eastern and Txok. At the end, I'll go price  
25 point. But the graph on the left shows the differential

1 over the last several years. The graph on the right, the  
2 differential implicit. In the MYMEX forwards. We believe  
3 that by the middle '08, Rockies gas will trade at about an  
4 even price with the differential. A differential affecting  
5 transportation costs, which should be between six and 12  
6 cents, not the 30 cents suggested in the forward curves.

7 The graph at the bottom shows a similar  
8 situation for the NGPL Texo Transco. These discrepancies  
9 result the market does not fully appreciate the magnitude of  
10 changes that lie ahead. But as is expected to become  
11 clearer, parties will clearly understand what the  
12 implications are and aggressively pull profits from the  
13 process of investments.

14 While several implications on these slides for  
15 you to consider are first, the adjustment process will  
16 create winners and losers. The winners are the new pipeline  
17 owners and their customers, the losers will be the competing  
18 incumbent pipelines that have relatively high fuel costs and  
19 lost and unaccounted for charges, and they're capped to  
20 suppliers.

21 FERC will increasingly be asked to reconcile  
22 disputes between pipeline actions that either directly or  
23 indirectly protect uneconomic flows from claims by shippers  
24 that those same actions wrongly add inappropriate costs or  
25 otherwise restrict access to lower-cost supplies.

1           Second, the physical market will increasingly  
2 provide changes in the financial markets. If the forward  
3 curves are as out of sync as we believe them to be, there  
4 will be vast opportunities for speculators to make and lose  
5 enormous sums of money in the coming years. This is a  
6 healthy thing as long as it's done properly. FERC's  
7 oversight efforts are very good, getting better and should  
8 be made even stronger.

9           Understanding physical flows is vitally  
10 important to this effort. FERC should implement ideas based  
11 on the recent, embedded in the recent NOPR on intrastate  
12 flow patterns, particularly in light of the new pipelines  
13 that are being built in Texas and Louisiana that will  
14 directly impact the interstate system.

15           The tools and knowhow to understand the physical  
16 market will be required to unravel proper from improper  
17 trading behavior. Implicit in the analysis is the belief  
18 that production appears to be booming relative to demand.  
19 This combined with the market dynamics ahead suggests that  
20 prices should fall. We could be headed for an  
21 unprecedented period of \$90-plus oil, combined with sub- \$5  
22 gas.

23           Lower prices carry at least two concerns. If  
24 they fall low enough or stay low for too long, capital will  
25 flee the sector, exploration activities will stall and two

1 or three years later, we'll have another period where prices  
2 soar. These cycles are probably inevitable, but government  
3 can alter the count to exacerbate delay the impacts.

4 It would be important for FERC as a market  
5 monitor to continue its efforts to educate the industry,  
6 public and other government bodies about the state of the  
7 market, the frailty of supply and demand balance and the  
8 potential impact for prices of various policy proposals.

9 Finally, lower prices will also make alternative  
10 energy investments more expensive. Wind, solar and other  
11 alternative technologies are generally more expensive than  
12 natural gas alternatives.

13 Utility decisions to invest in alternative  
14 technologies are based in this sense on noneconomic  
15 considerations. At \$7 to \$8 gas prices, the economic  
16 penalty associated these technologies is acceptable. Will  
17 it be if gas prices fell to \$4 or \$5. I obviously believe  
18 we are headed into a period that's going to be very dynamic  
19 and challenging.

20 I'll be happy to answer any questions.

21 MR. WRIGHT: Thank you, Mr. Bennett.

22 Steve?

23 MR. HARVEY: Thank you.

24 The U.S. natural gas market today, or as the  
25 Chairman pointed, the North American natural gas market

1 today is far more into developments nuanced in the services  
2 that it offers and actively traded that anyone might  
3 reasonably have imagined. From the early stages in the mid  
4 1980s.

5 In general, that is a very good sign. An  
6 actively trade market with lots of robust options presents  
7 many effective ways for concerned buyers and sellers to  
8 monitor risks associated with volatile commodities.

9 Inherent, however, in that development, is that  
10 robust markets attract a wider variety of participants with  
11 various motivations, interests with the existence of these  
12 markets. That means that a broad spectrum of speculators  
13 naturally becomes important in the development of the prices  
14 used by buyers and sellers meeting their direct, physical  
15 energy needs.

16 As a consequence, we must understand several  
17 important points about the functioning of the market today,  
18 and keep a close eye on how it might be changing.

19 The first point is that from an oversight  
20 perspective the traditional boundaries of Commission  
21 jurisdiction don't apply. To be comfortable about natural  
22 gas prices, we have to track those particular markets that  
23 are most crucial in forming prices, those that transmit  
24 prices and price information, and those that make use of  
25 price information created elsewhere.

1            Relevant markets can fall in a number of  
2 categories, physical, financial and futures. Because the  
3 overall market is usually in transmitting information across  
4 those boundaries constantly.

5            The second point is that you have to acknowledge  
6 the complexity of these markets. New transactions and  
7 trading are being developed constantly. And existing  
8 transactions are being used in new ways. As a result, a  
9 price may have been a particular thing for years, but  
10 changed its meaning as activity changes.

11           In the Commission's staff efforts, we care about  
12 the movement of prices through the market for two reasons.

13           First is that buyers and sellers with other  
14 risks on their minds might not track changes in all the  
15 markets that affect their natural gas pricing. Educated  
16 producers and consumers are critical to making sure that  
17 markets reach effective results. And one way we can help  
18 educate them through public oversight efforts.

19           Second, manipulations generally require some  
20 kind of distortion of information from markets, often in  
21 price producing markets, to take profits in price consuming  
22 markets. Recent Commission orders underscore the value of  
23 looking at market information flows as a way of identifying  
24 possible manipulation.

25           As an example of how changes in the structure of

1 the market over time can change the meaning of prices  
2 important to buyers and sellers, I'd like to review the  
3 emergence of the transaction known as physical basis and  
4 how it created an information flow different than what has  
5 been in the past.

6 The natural gas spot market that emerged in the  
7 mid and late 1980s consisted of traders calling each other  
8 and agreeing on prices for gas delivered monthly in many  
9 locations around the country. The trade press polled  
10 traders about fixed prices and published the results.

11 The New York Mercantile Exchange or NYMEX  
12 introduced its futures contract in the early 1990s designed  
13 to tie the monthly spot market centered on Henry Hub,  
14 Louisiana, to tie to that market. Today, the natural gas  
15 futures contract is the second most successful energy  
16 contract that NYMEX trades behind only crude oil.

17 For example, in 2006, EIA estimates that the  
18 United States consumed 21.7 trillion cubic feet of gas.  
19 NYMEX reported futures trading of more than ten times that  
20 volume.

21 To deal with locations away from Henry Hub, basis  
22 swaps emerged in the 1990s. In the U.S. gas markets, basis  
23 means the difference between the price at Henry Hub and  
24 everywhere else. Basis was one of the first actively traded  
25 forms of financial natural gas transactions. Basis trading

1 through NYMEX or the intercontinental exchange, or ICE, in  
2 2006, was somewhere between 30 and 40 times the volume of  
3 U.S. fixed price monthly trading.

4           With the development of more granular daily  
5 trading in the 1990s, some interest shifted away from  
6 trading fixed price monthly transactions. Across the  
7 eastern United States, buyers and sellers created a new  
8 fiscal monthly product. A product where the seller actually  
9 delivers gas at a particular location known as physical  
10 basis.

11           Physical basis sets its price by adding to the  
12 final NYMEX futures settlement price a fixed basis amount  
13 to account for the delivery location. In effect, physical  
14 basis creates a physical gas price by borrowing prices from  
15 both the futures and the financial swap market.

16           Physical basis transactions fit trade publishers'  
17 definitions of prices that can go in the monthly inducees,  
18 and so they include them. This creates a sort of conundrum.

19           Platts' Henry Hub index price generally relies on  
20 physical basis transactions. Consequently, the Henry Hub  
21 monthly spot market, the one the futures market was based  
22 on, now prices off of the futures market itself. Monthly  
23 prices don't come from the underlying physical market  
24 anymore. They come from the futures market instead.

25           Interest, physical basis dominates most monthly

1 inducees in the eastern United States and along the Gulf  
2 coast. And barely exists in the west. The comindum of  
3 underlying physical prices barring directly from futures  
4 trading, may or may not prove to be much of a concern.

5           The futures market is generally large in the  
6 United States, and, consequently, the place to get the  
7 pricing Commission for many purposes. So long as we  
8 understand, the interest to financial players associated  
9 with different prices are used producers and consumers, rise  
10 directly from futures settlement curbing key physical basis.

11           The physical natural gas market is of interest to  
12 the Commission today are complex and highly interactive with  
13 influences drawn from constant communication with both  
14 futures and financial markets.

15           In the end, effective oversight of  
16 jurisdictional U.S. natural gas markets requires a  
17 comprehensive understanding of the complex and changing  
18 nature of a whole complex of energy and related markets.

19           Thank you.

20           MR. WRIGHT: All right, thank you, Steve. Now,  
21 we'll turn to the Chairman and Commissioners for questions.

22           CHAIRMAN KELLIHER: Colleagues, who wants to  
23 start?

24           Commissioner Kelly.

25           COMMISSIONER KELLY: Mr. Bennett, thank you for

1 your presentation. I have a couple of questions.

2 One of the issues we do have direct jurisdiction  
3 over is gas quality. Have you thought about the impact of  
4 gas quality on gas quality standards we might set for  
5 various pipelines on the flow of gas in the United States?  
6 Or maybe putting it another way, should we anticipate that  
7 gas quality issues would become an arena where competitors  
8 would compete?

9 MR. BENNETT: I am not technically qualified to  
10 speak about the COT levels and another kinds of quality  
11 issues. I think, though, you can expect that is going to be  
12 a tool used by qualities to protect. It's an example of the  
13 kind of tool that can be used by parties to protect what  
14 would be, otherwise, marginally economic closed, and things  
15 like that. I think you will see more of that, for sure.

16 From what you describe, the likely changes and  
17 the relatively probability of production areas, you will see  
18 implications for future infrastructure developments,  
19 specifically, I guess I'm thinking do you see it as likely  
20 to put more pressure to develop LNG terminals on either of  
21 the coasts, as opposed to the Gulf. Do you think it will  
22 decrease the use of LNG terminals and the import of LNG into  
23 the Gulf area, relative to the coast.

24 The other question I had about that is do you  
25 expect to see any other large pipeline infrastructure

1 development to redistribute the property, or do you think  
2 that pipeline development, major pipeline development will  
3 be maxed out after REX west and east?

4 MR. BENNETT: Speaking to the LNG question  
5 first, a lot, one of the things we see now is that a lot of  
6 the projects that we see coming along now the next two or  
7 three years, we see development. In the spring, we saw a  
8 situation where it was warm. You can have LNG come here  
9 because it's really the only place you can store gas. When  
10 that addition is resolved elsewhere. That's likely to  
11 continue. When that happens, it all comes into the Gulf.  
12 It's going to converge into a pipeline area that is  
13 expanding, but most of the expansion is within the Gulf.  
14 It's to move gas around in the Gulf. It's not to get out of  
15 the Gulf. That's what the issue is.

16 I think you're going to see build up in the Gulf  
17 and I would think that's you'd want to see more LNG around  
18 the country. Up in the northeast and out in the west. More  
19 built in the Gulf area.

20 In terms of your second question, I think it  
21 very likely you're going to have to see another long haul  
22 pipeline built out of the Rockies. We're expanding  
23 production out there. Probably, this year, it's going to  
24 come in 630, 640 million a day. It only takes three or four  
25 years before you fill REX. There's a lot of belief out

1 there that by 2010, REX will be full, and we're going to be  
2 right back in this situation that we've gotten to  
3 experience this summer of 15 cent gas because there's no  
4 export capacity.

5 I think that you'd really like to see additional  
6 volumes there and then I think the pipelines in the  
7 northeast are also important. REX is not really impacting  
8 the 25 dollar gas day in the winter in the northeastern  
9 United States. You've got to get additional capacity east  
10 of Clarington in order to make that happen. I don't think  
11 it helps doing it in drips and drabs, 100 million, 200  
12 million a day. You need a Bcf a day pipeline or a  
13 significant sized capacity.

14 COMMISSIONER KELLY: Thanks. Just one follow-up  
15 question. When you talked about the impact of prices, do  
16 you see a short term price impact or do you see volatility  
17 associated with just the LNG imports to the Gulf? Assuming  
18 we get LNG imports into the Gulf.

19 MR. BENNETT: But I don't think there's any  
20 question about it. This Texas production, if you put that  
21 all together, it's growing at around 700 million a day.  
22 Something on that time frame. If you bring the Gulf in,  
23 Independence is throwing a Bcf a day. Half of that is  
24 offset by declines elsewhere. Maybe you've got another half  
25 Bcf a day coming in off of Independence and the big offshore

1 things. There's a lot of gas in the Gulf.

2 Then if you have a new LNG capacity on -- into  
3 that turning point as far as Bcf a day. This follows a  
4 seasonal of three or four Bcf a day of gas dropped into that  
5 market, which is already pretty strongly supplied. It can  
6 happen at depressed places. LNG in the short term. It is  
7 going to do a lot to exacerbate volatility problems down  
8 there. Have a sense of how long that would last.

9 MR. BENNETT: That's really a function of how  
10 long production keeps up. Which is my point about prices.  
11 Once the prices come down in the three to four dollar range,  
12 probably, you will start to see drilling patterns slow down.  
13 At that point, you start to see the declines kick in.  
14 There's been lots of research done that would suggest it  
15 takes three to four years for those declines to really start  
16 to impact overall volumes. Until that happens, or unless  
17 that happens, I don't see the situation changing.

18 The production supplier response to high prices  
19 is quite significant. We're talking a three percent  
20 increase this year. It's a big change. And I think that  
21 as long as that keeps up, it will keep LNG as a fairly  
22 disruptive influence down there.

23 COMMISSIONER KELLY: Thank you. Steve, I don't  
24 know if you have the information about contracting to be  
25 able to answer this question, but do you know whether, given

1 the contracting situation in the United States, do you  
2 anticipate the changes in prices and the volatility in the  
3 gas market to be translated quickly to the retail customer,  
4 or is there a lag in there? Or are hedging instruments in  
5 place sufficient to monitor or to straighten out the  
6 volatility?

7           What's your sense of what's going to happen in  
8 the retail market as gas prices change relative to,  
9 relative to production areas? Involuntarily increases.

10           MR. HARVEY: A lot of the volatility we watch in  
11 the wholesale markets and the stock markets, in particular,  
12 sort of work itself. The volatility part works itself out  
13 of the system as it goes through retail. Physically, local  
14 distribution companies do a number of things they might not  
15 call risk management. They might. But by buying over time,  
16 by making use of storage, they're blending a lot of  
17 different sources, primarily over time, to turn that into  
18 rates that get translated. To the extent prices move sort  
19 of up and down through that process that then works its way  
20 through that system over time.

21           For example, we're most likely still seeing some  
22 effects, I would guess, in retail markets of gas that was  
23 put into storage subsequent to the hurricanes with really  
24 high prices. Then those prices came down. We see that kind  
25 of rate, too. So, there's an aggregation effect that sort

1 of reduces the volatility elements of that. That doesn't  
2 really sort of reduce, sort of, the overall movement over  
3 time.

4 So, for example, the downward pressure that  
5 Porter was talking about on the Gulf probably doesn't really  
6 translate too much down in person when you can end in  
7 northeast because of the pipeline constraints running up  
8 there. So you might see more volatility, more  
9 geographically distributed based on changing pipeline  
10 pattern. But unless you get new capacity going into the  
11 consumption areas, you won't see some of that supply  
12 pressure coming back down for retail customers.

13 UNIDENTIFIED SPEAKER: You think that's sort of  
14 the bottom line?

15 MR. HARVEY: Yes.

16 UNIDENTIFIED SPEAKER: Mr. Petak, just one  
17 question for you.

18 I have the graph that you showed us on the  
19 carbon policy gas demand. It is very interesting. I  
20 wonder if you could elaborate a little bit more for us on  
21 why and how gas demand is impacted by our carbon policy?  
22 What is it about gas, relative to coal, for example, that  
23 causes it to go up or to go down depending on the level of  
24 carbon control?

25 MR. PETAK: I think gas has an advantage over

1 coal in the near term. It's been referred to as a bridge  
2 fuel for carbon policy. It has an advantage over coal in  
3 the near term, in that there are already gas units there  
4 that are generally underutilized, combined cycle units that  
5 are underutilized today in a number of regions throughout  
6 the country.

7           Assuming our economy continues to grow and we  
8 have incremental electric load growth, then we have to rely  
9 on some form of generation that meets that electric growth,  
10 hence, gas generations from both combined cycles that are  
11 very underutilized today. Whereas, coal is not  
12 underutilized. It's much more heavily utilized. Coal, on  
13 an units on average, are utilized throughout the country at  
14 75 percent utilization rates. On an average annual basis.

15           And there's a number of regions where they're  
16 utilized at very high rates. The lead time to build coal  
17 units is very significant. From cradle to grave to get a  
18 new coal plant on the ground is generally -- you see a lot  
19 of analysts estimate seven to ten years.

20           Now, there's gas capacity out there to generate  
21 electrical growth to gas is a relatively clean fuel as far  
22 as the fossil fuels are concerned. Much less carbon  
23 emissions than oil and coal, so it's got good fuel and you  
24 can have new technologies come in in the much longer term.  
25 With things like nuclear and coal, it's carbon

1 sequestration. But it's a lead prom issue. It's an  
2 infrastructure development issue that gets us over the  
3 hurdle.

4 That's why gas is attractive in the mid term.  
5 That's why whenever you look at all of the various bills  
6 that are out there, the different carbon policies that are  
7 being contemplated, gas uses is slightly up in all of those  
8 bills, at least over the next ten, 15, 20 years. It's  
9 really in the longer term whether the gas use declines  
10 significantly.

11 COMMISSIONER KELLY: Do I also hear you say that  
12 gas would decline over time, gas use would decline over  
13 time, particularly relative to coal, assuming that there's  
14 advanced technology that can capture the carbon of coal?

15 MR. PETAK: That's absolutely correct. That  
16 means you'd have to have a whole carbon sequestration  
17 industry involved, which is a lot of infrastructure. It's  
18 pipes. To be able to move the carbon back to areas where  
19 you an adjust it back into the ground. That's a whole set  
20 of infrastructure that would have to ber developed over  
21 time. That just takes a lot of time, regulatory changes,  
22 perhaps, to allow that to happen. Some clarification on  
23 legalities.

24 These are all the issues involved. That's just  
25 an issue of how much time it would take to get there. Most

1 analysts think that that carbon sequestration world is out  
2 there in the much longer term. At least 20 years out from  
3 today.

4 COMMISSIONER KELLYL: Carbon policy or no carbon  
5 policy, we're going to continue. I guess that's not  
6 correct. No carbon policy may see --

7 MR. PETAK: That's correct. Again, it's the  
8 lead time with new coal plants coming into the market  
9 place.

10 COMMISSIONER KELLY: Carbon policy contrary to  
11 the reflexive thought on what carbon policy would do, a  
12 carbon policy would actually tend to keep demand for gas up  
13 or increase it.

14 MR. PETAK: Increase it from today's levels?  
15 That's correct.

16 COMMISSIONER KELLY: Thank you.

17 CHAIRMAN KELLIHER: Commissioner Moeller.

18 COMMISSIONER MOELLER: Thank you, Mr. Chairman.  
19 I'd like to follow-up Mr. Petak on that last slide.

20 It strikes me -- I like your phrase about  
21 natural gas being the bridge field. I'm afraid it's going  
22 to be a pretty long bridge. Because as you've just noted,  
23 the other technologies, and I think we're all supporters of  
24 renewables, but usually, they need a lot of significant  
25 transmission to get one to the market. They don't have

1 quite the base load advantages of other plants.

2           And if you could elaborate a little bit on the  
3 factors you use, it strikes me that between 2007 and 2010,  
4 the trajectory of that curve could be higher. Again, we see  
5 coal plants -- let's take Florida. Two of them cancelled,  
6 reserve margins tightening -- gas is really, apparently, the  
7 only option for new generation there. It's a small example,  
8 but significant.

9           Can you talk a little bit more about what you  
10 used in terms of analysis to go into the chart?

11           MR. PETAK: We looked at the different bills  
12 that were out in Congress and considered some of the  
13 different things about offsets and CO2 caps and limits on  
14 CO2 emissions over time. Obviously, the less stringent  
15 policy that's shown here has to have small offsets in it,  
16 whereas you don't have as many offsets in the more stringent  
17 policy where you are trying to get the reduced carbon  
18 emissions much quicker.

19           I think you're hitting on an important point. In  
20 looking at the 2007 projectory, that does worry me as an  
21 analyst a little bit, I think. You are looking at a two TcF  
22 increase in gas use, potentially, over a three to four year  
23 period. That's 500 BcF per year increase.

24           If you look closely at the supply charts that I  
25 showed in my presentation, it's inadequate to meet this type

1 of increase. It just means that you stress the system that  
2 much more. Or like my colleague here, I don't necessarily  
3 see the gas prices will go down significantly and remain  
4 down.

5 I think there is the demand side of this equation  
6 where there's pressure on gas use by primarily for power  
7 generation. If you throw carbon policy in on that without  
8 significant offsets or some sort of allowance to get there  
9 more slowly, there's that much more pressure on supply  
10 development and infrastructure development.

11 COMMISSIONER MOELLER: Just the uncertainty  
12 about where we're going over carbon policy, I think plays  
13 into gas being the fuel of choice.

14 MR. PETAK: I think that's right. Our lessons  
15 that we show where, we refer to it as a no agreement on  
16 carbon policy case. In that case, the reason that it looks  
17 similar, to perhaps, the expected CO2 case at least for the  
18 next 15 years is because there's no agreement.

19 That uncertainty alone looming out there on  
20 carbon policy kind of encourages the providers in the market  
21 place, or it discourages the providers in the market place  
22 from building carbon emitters, like coal plants, for  
23 instance. That's your point about Florida where we've see  
24 the cancelation of coal plants. And other areas, as well,  
25 over the last two years. It's the lack of having any carbon

1 policy in place I think that's discouraging building those,  
2 reconstruction of those plants.

3 COMMISSIONER MOELLER: I was going to ask you,  
4 reaction to your, to Commissioner Bennett's comment on  
5 prices going down, but now I'll ask Mr. Bennett to the  
6 discussion we just had.

7 MR. BENNETT: To a great deal, it's a matter of  
8 timing. If you look at the next couple of years, it's when  
9 I see the pressure being most acute price. If you state the  
10 bill demands for power plants, which I agree, is really the  
11 only real alternative that makes sense. That starts to  
12 change the equation a little bit. But, let's say you are  
13 building a power plant and you could procure a long term  
14 contract in about 18 to 24 months in the Midwest, you'd  
15 really be hitting the sweet spot. But if you can get a long  
16 term contract, I'd be surprised if you could accomplish  
17 that.

18 MR. MOELLER: Steve, what are your reactions? On  
19 the discussions we just had?

20 MR. HARVEY: I think one of the interesting  
21 things that will take you through a market's approach to  
22 this system, lots of these horses get resolved. We've been  
23 talking for some time about the construction of natural gas  
24 plants for electricity. And I think we've been watching  
25 that effect as it's played out over the last couple of

1 summers. Two summers ago, and then last summer. Particular  
2 this last haul where a lot of that capacity was being  
3 actively used and we actually saw a lot coming out of the  
4 system.

5 Having said that, had a fair amount of natural  
6 gas demand for electric generation, comparatively, year over  
7 year, and still to be at record levels of natural gas  
8 storage suggests that there have ben some responses in terms  
9 of supply, perhaps in terms of consumption at a certain  
10 level. With relative oil prices, if you are burning gas,  
11 you're burning gas. You're not burning oil anywhere.

12 To be in this overall condition suggests to me  
13 that we may not have our heads completely around kind of the  
14 overall supply of responses going on, as well. So, as I've  
15 said many times, from here we don't forecast. So I'm not  
16 sure I can engage in too much of that, but I will say it  
17 looks like we've seen a pretty robust supply response so  
18 far.

19 Given the increasing consumption we're seeing in  
20 places like electric generation.

21 MR. BENNETT: One other point that kind of makes  
22 this a little bit muddier is that if you look at demand  
23 right ow, demand is up probably somewhere in the  
24 neighborhood of six, seven percent for the year. On the non  
25 power side. It's a little higher down on the power side.

1           The problem is you looking again at a base  
2 that's very low. Last year, '05 and '06, we virtually had  
3 no winter. What really is important to overall gas demand  
4 is consumption. Some say the middle of December to the end  
5 of January.

6           If we continue to have warm winters, then the  
7 upper supply response can be bigger than it in fact is. On  
8 the other hand, if we can get around of having a normal 30  
9 year average winter, it's going to look very different. We  
10 haven't had one of those for at least 29 years, or something  
11 like that now. So, it's an issue.

12           CHAIRMAN KELLIHER: Commissioner Wellinghoff.

13           COMMISSIONER WELLINGHOFF: Thank you, Mr.  
14 Chairman.

15           Mr. Petak, thank you for your presentation. I  
16 have a couple of questions on your supply chart.

17           Looking at that, it looks like what you're  
18 really saying to us is that the lockees and LNG imports are  
19 really serving us. If we couldn't have those, we would be  
20 in serious trouble with respect to our supply.

21           MR. PETAK: I think all of the supplies, the  
22 need for frontier supplies, as I refer to them here, are  
23 serving us. They're all going up. I state the importance  
24 of the mid continent shields. They have grown  
25 significantly.

1           Currently, they're sitting in about one trillion  
2 cubic feet a year in production. And we have them going up  
3 to about three trillion per year. It's all these supplies  
4 that are contributing. You know, that worries me. We're  
5 relying on all of the significant growth, particularly from  
6 LNG imports.

7           We didn't talk a lot about LNG imports in this  
8 session. And our panel here this morning with LNG imports  
9 are frequently in question, what is the rest of the world  
10 doing with regard to demand.

11           We know that Asia, for instance, has a lot of  
12 meter LNG. Japan is the biggest LNG importer today. China  
13 is significantly growing economy. India has a secretively  
14 grown economy and it worries me that we are becoming reliant  
15 on the source of supply where the rest of the world is also  
16 becoming reliant on that source and supply. And this is  
17 significant growth, no doubt about it.

18           But I think with the liquefaction assumptions  
19 that we have about projection, that supply will be adequate  
20 to supply these levels of gas to North American consumers.  
21 Given what we're projecting for the rest of the world. But  
22 I think, also, this is requiring about 60 or so liquefaction  
23 projects over the next 15 to 20 years. That's a lot of  
24 infrastructure to be developed over that time period.

25           COMMISSIONER WELLINGHOFF: I know we're going to

1 get into this on the next panel, but do you see LNG setting  
2 the floor or ceiling for gas prices in this country?

3 MR. PETAK: Neither. I see the supply  
4 constrained environment that we've been in persisting for  
5 some period of time. Remember, I talked about consumers  
6 setting the price of gas because they're bidding scarce  
7 molecules of gas away from each other.

8 The marginal cost of LNG, and the next panel can  
9 talk to this more specifically. I see it somewhere in the  
10 5- to 550 ballpark. There's certainly some LNG supplies at  
11 a lower cost than that. I tell you, that's about the upper  
12 limit. Whereas, I see gas prices with a lot of volatility  
13 around them. Continuing in the six to seven dollar per  
14 MmBtu in their park. That's the consumers setting the  
15 price.

16 In other words, all these supplies mixed  
17 together, consumption is still running ahead of supplies and  
18 supplies having to run pretty hard to keep up with it.

19 COMMISSIONER WELLINGHOFF: A couple more things  
20 on supply. I thought I read something about some finds in  
21 the deep Gulf there are major finds of new gas in the Gulf  
22 that doesn't seem to be reflected in your numbers here.

23 MR. PETAK: That had been the case until a  
24 couple of years ago. Then I think what happened is we had  
25 the big hurricane here in 2005 with Katrina and Rita.

1 Producers shifted activity to refurbish restoration and  
2 supplies and perhaps delayed some of the development of the  
3 new supplies.

4 Having said that, we do have a number of new  
5 fields under, you know, our projections this year and next.  
6 There is some incremental increase here, although it's  
7 difficult to see how on this scale, it's probably about a  
8 three to 500 BcF annual increase in the supplies from the  
9 Gulf.

10 This is a great question, which is as we go out  
11 into deeper and deeper waters, what's there. And it becomes  
12 more uncertain and becomes less certain. There is some  
13 degree of uncertainty in this projection.

14 COMMISSIONER WELLINGHOFF: With respect to more  
15 examples of supplies, what about gas hybrids? Is that  
16 something --

17 MR. PETAK: It's not in our projection to 2025.  
18 It's certainly something we keep a lose eye on. Right now,  
19 this isn't certainly in your costs, but there are certainly  
20 a number of companies investing -- and also gas hybrids,  
21 this is an area that bears close watching. And, certainly,  
22 the gas hybrid resource potential is huge. That's certainly  
23 a supply that bears close watching.

24 COMMISSIONER WELLINGHOFF: Let's flip to your  
25 demand chart. I'm interested there in a couple of

1 questions. What does your model CO2 case mean? What are  
2 you assuming there? For the model CO2 case?

3 MR. PETAK: That's the Bingaman policy that's on  
4 the floor right now.

5 COMMISSIONER WELLINGHOFF: And that's what  
6 you're indicating is a model CO2 case passed through  
7 Congress. That in itself will require less gas than just a  
8 reference case. I guess that's because the reference case  
9 may take a period of time.

10 MR. PETAK: That's right.

11 COMMISSIONER WELLINGHOFF: Why does your  
12 expected case exceed your stringent case in the out years?

13 MR. PETAK: I think that's because gas is still  
14 an attractive fuel as far as the carbons go. That is  
15 certainly where the environment becomes murkier. And I'm  
16 not a CO2 expert. Within ICF we have a whole group of staff  
17 that works on CO2 issues. But it could also have something  
18 to do with the cost of the carbon sequestration that we're  
19 assuming.

20 But the technology issue --

21 COMMISSIONER WELLINGHOFF: Just seemed like an  
22 odd thing in your chart. What does your analysis say, if  
23 anything, about the potential for electrification of the  
24 transportation sector?

25 MR. PETAK: The gas transportation sector?

1           COMMISSIONER WELLINGHOFF: Vehicles, going to  
2 electric vehicles, primarily. Or plug-in hybrids that don't  
3 use a lot more electricity, but then could require a lot  
4 more natural gas.

5           MR. PETAK: That's a great question. I can't  
6 speak to that because I did not look at the vehicles  
7 forecast.

8           COMMISSIONER WELLINGHOFF: There are lots of  
9 bills in Congress to incentivize plug-in hybrid electric  
10 vehicles.

11          MR. PETAK: Right.

12          COMMISSIONER WELLINGHOFF: Mr. Bennett, I've got  
13 a couple of questions for you. Thank you, as well, for your  
14 presentation.

15                You indicated that you felt from the scenario  
16 that you were going through with respect to these pipelines  
17 that are proposed and some that are being built in Hampton  
18 belt. But there are going to be some winners and losers,  
19 and the losers will be those pipelines with high fuel costs,  
20 is that correct?

21          MR. BENNETT: High fuel and lost and unaccounted  
22 for charges.

23          COMMISSIONER WELLINGHOFF: Would you recommend to  
24 those pipelines that they in fact make infrastructure  
25 upgrades to reduce their fuel costs? Would that be prudent

1 on their part?

2 MR. BENNETT: Where they can do it. The problem  
3 is with many of them, it's not really an economic issue.  
4 Some of these pipelines are fairly old. The pipelines can't  
5 handle more compression. There's lots of issues associated  
6 with that issue. And will contend -- in many cases, options  
7 are not very great for some of them. It's hard to find  
8 another place to put a pipeline that can help offset the  
9 problem.

10 COMMISSIONER WELLINGHOFF: Let's see.

11 Steve, a question for you. I was very  
12 interested in your presentation, as well. Thank you.

13 The need conundrum, the underlying process  
14 falling directly from futures trading, ultimately -- I  
15 think your point being that really makes the financial  
16 players much more important than this overall situation of  
17 price. What implications do you draw from that for the  
18 Commission as regulators?

19 MR. HARVEY: I should say I was trying to keep a  
20 lighthearted twist. The reason there are sort of two stock  
21 markets for gas. There's the next day market, which I would  
22 say really is functioning as the stock market. And there's  
23 the monthly market which was developed in the '80s and we  
24 have sort of held onto it because it's convenient. Because  
25 of the time of the futures market was developed, it ties to

1 that market.

2           So, when it just kind of went away, at least in  
3 parts of the United States, actually going in and fighting  
4 it out in that monthly market, you created that conundrum.  
5 The good news is really probably the largest next base stock  
6 market in the country is Henry Hub.

7           So, you haven't completely lost information  
8 coming from the physical market, it just doesn't tie  
9 directly into the futures market anymore. The good news,  
10 though, is there's still a place where real spot, physical  
11 on the ground, I'm desperate, I've got to get rid of it or  
12 I'm desperate and I need something terribly. They're still  
13 coming into the system.

14           It's really on that monthly market where  
15 intercept, the market says we give up, we're not going to  
16 try to create that on the physical side. We're just going  
17 to take that from the financial side. Assuming it depends  
18 on your perspective. Whether that's a good idea or a bad  
19 idea. The idea of a price discovery in a futures market  
20 NYMEX is aware of this and supportive of the idea, really  
21 lends the idea, well -- there's a lot of people  
22 concentrating in the futures market. That's a good thing.

23           You've got a lot of liquidity, a lot of  
24 activity, and that sort of thing. It does mean, I think,  
25 because of the importance along the east coast and on the

1 Gulf coast, the continuing importance of this monthly fixed  
2 price contract turned into indices. It is a real sort of  
3 direct plug back into the financial end of things. That's  
4 where my sense is.

5 It's important for the distribution companies or  
6 the big customers that have been buying on that monthly  
7 basis, they at least understand where their prices are  
8 coming from. They may prefer that, they may not mind. That  
9 there's going to be lots of financial activity, lots of  
10 investor activity, speculative activity. However you want  
11 to put it. And is this enough of it? Is enough going in  
12 different directions.

13 That shouldn't be a problem, but they need to  
14 know that because it is coming from there and it is  
15 creating a lot of that. That monthly price is really,  
16 really important through a whole set of physical and even  
17 jurisdictional kinds of transactions.

18 COMMISSIONER WELLINGHOFF: As a result, we as  
19 regulators need to watch what?

20 MR. HARVEY: Well, it's interesting from an  
21 enforcement perspective, we need to watch that and see how  
22 the mechanics of that work. We've done that. There are  
23 some issues related to that. From an oversight perspective  
24 I think it's important that we've been doing this over the  
25 last couple of months to engage with the state regulators,

1 in particular, so that they understand that linkage.

2 In those conversations, we often get the  
3 question, what are our alternatives? If we are not  
4 comfortable with that much of a direct influence coming out  
5 of a futures market, what are our alternatives? That's  
6 where an active daily market is a helpful thing. It creates  
7 one kind of alternative. That's where longer term  
8 contracting, fixed price contracting -- but it does put more  
9 stress on state regulators to develop more sophistication.

10 It's been easy to take an index and say this is a  
11 benchmark and we'll just apply it against a benchmark. Sort  
12 of saying that benchmark has some issues and you've got to  
13 understand those issues. I think that really is making the  
14 state regulatory process much, much harder. More so than,  
15 necessarily, than your job in terms of that.

16 Our interpretation has been let's get the  
17 information out there and let's start the conversation in an  
18 active way. And let's see if in that conversation, we can  
19 develop alternatives that are better or not as good for them  
20 in that process.

21 COMMISSIONER WELLINGHOFF: Hopefully, much.  
22 Thank you, Mr. Chairman.

23 CHAIRMAN KELLIHER: My colleagues have asked  
24 most of my questions, particularly Jon's last line of  
25 questions, but let me just ask a couple quick questions. I

1 don't have much time, so I'll ask you for pretty incisive  
2 answers. First, following up on that language on that line,  
3 I want to ask Mr. Petak and Mr. Bennett, do you agree that  
4 the physical and futures markets are converging? Actually,  
5 probably. All of them have converged, there is convergence.

6 MR. PETAK: Yes, I hope they have converged.

7 CHAIRMAN KELLIHER: Thanks.

8 Mr. Bennett?

9 MR. BENNETT: I would say the same.

10 CHAIRMAN KELLIHER: Thanks.

11 We didn't talk about rig count. The rig count is  
12 at record or near record levels, but there have been valiant  
13 efforts by producers to maintain domestic production. I  
14 think they have had impressive success, but there's natural  
15 limits to the success we can have in the lower 48, it seems.  
16 But the rig count is at record or near record levels.

17 MR. PETAK: That's correct.

18 CHAIRMAN KELLIHER: Is LNG affecting U.S. gas  
19 price now? Mr. Petak, you suggest no, it's not. Consumers  
20 are setting the price of LNG as a price taker.

21 MR. PETAK: LNG is a price taker. At 67 dollars  
22 gas price. Again, your next barrel could cost more at this  
23 point. That's not to say that the molecules themselves are  
24 important for the market. This supply demand balance would  
25 be even that much more tight. And if you didn't have the

1 incremental LNG, then you'd have to have supply from  
2 something else. Which means you'd have to go even  
3 domestically and have more success on domestic funds.

4 CHAIRMAN KELLIHER: Mr. Petak, are you saying LNG  
5 right now is affecting U. S. prices or it might in the  
6 future if it becomes a larger share? But I think it is more  
7 impact, particularly when the new facilities come out. This  
8 year, it's filled storage faster and it's probably having a  
9 little bit of an effect on price, but not a huge one.

10 CHAIRMAN KELLIHER: Thanks. Mr. Bennett, are you  
11 saying that the 52 card pick up resulting from REX will  
12 result in greater basis differentials and greater  
13 volatility in the hubs, pricing at the hubs?

14 MR. BENNETT: Yes. It's not so much that it's  
15 going to be greater, just differentials. But change in  
16 relationships between the Rockies and Anadarko, which were  
17 forced to some kinds of behaviors out of producers and  
18 shippers.

19 CHAIRMAN KELLIHER: Mr. Petak, you slide about  
20 net trade with Canada and Mexico, the reduction of exports  
21 to Mexico, you think is because of LNG imports into Mexico,  
22 not increased domestic Mexican production.

23 MR. PETAK: I think there is some potential for  
24 increased domestic Mexican production, but most of the  
25 incremental increase to meet the demand there is LNG

1 imports.

2 CHAIRMAN KELLIHER: I had some of the same  
3 interests in your carbon slide. I would have thought the  
4 spread would have been greater, actually, among these  
5 options, but you explained by explaining what the reference  
6 case was. The reference case is continued uncertainty  
7 rather than a no-go decision, if you will. What are your  
8 assumptions regarding nuclear, wind, energy efficiency? Are  
9 you assuming that those are static in these four scenarios?

10 MR. PETAK: Absolutely not. We have in all of  
11 our scenarios, significant penetration of the renewables  
12 over the next ten to 15 years, in particular. Because  
13 renewables, you know, gas is the bridge fuel and certainly  
14 remains a larger part of the generation mix. But renewables  
15 are a very important component here because the generation  
16 is growing more than the actual gas could fill the void on  
17 the generation mix.

18 So, in the much longer term, around 2015 and  
19 thereafter, we are building new nuclear units in all of our  
20 projections, even our no-agreement, our reference case.

21 I think in our reference case, we have around 20  
22 gigawatts of new nuclear facilities by the year 2025.  
23 Granted, most of these new plants are at sites where the  
24 footprint is already there to build the capacity and it's a  
25 one to two gigawatt unit that is being installed beside an

1 already existing one gigawatt unit.

2 CHAIRMAN KELLIHER: Is the stringency 02 case the  
3 carbon tax or what is that?

4 MR. PETAK: I believe that's the case. Again,  
5 I'd have to talk more with our experts and our own staff who  
6 created the assumptions for the cases. But I think that's a  
7 problem tax case.

8 CHAIRMAN KELLIHER: Very interesting.

9 Thank you very much. I want to thank all the  
10 panelists.

11 Steve, I didn't ask you a question because I get  
12 to ask you questions frequently. No disrespect  
13 interpreted. Thank you very much.

14 Prepare for the next panel, Jeff.

15 MR. WRIGHT: If the next panel would take their  
16 place, and thanks to the first panel.

17 (Pause)

18 While our speakers are taking their seats, I  
19 mention that I don't that there is any doubt that dealing  
20 with the last panel, the LNG would be preying significantly  
21 on U.S. gas supply. Going to examine how the U.S. can  
22 obtain adequate supply of LNG in emerging global market.

23 This panel will be consist of Ms. Spomer, vice  
24 president of the western hemisphere LNG for the BG group  
25 LOC, Richard Grant, senior advisor on LNG Activities at Suez

1 Energy International. Zach Allen managing director Pan  
2 EurAsian Enterprises, Inc. and Patricia Outtrim, vice  
3 president Cheniere Energy, Inc. Ms. Spomer will lead off  
4 the subject.

5 MS. SPOMER: I'd like to first thank Chairman  
6 Kelliher and the other Commissioners in the FERC staff for  
7 inviting me here today.

8 As the president addressed this interesting  
9 topic, to which I'm deeply involved. That's a picture of  
10 Elba Island with one of BG's vessels, which is a great job.

11 This is a notice of forward looking statements.  
12 I think the role of the U.S. market in the global LNG trade  
13 is an incredibly interesting story.

14 What you have is the U.S. is introduced  
15 liquidity into a trade that has never had any really  
16 before. What you have, traditionally, are gas on bilateral  
17 markets, primarily in Europe and Asia Pacific.

18 What the U.S. does with gas on gas competition is  
19 the first market really in the global bucket of activity  
20 allocates demand on price. I can demonstrate the price  
21 elasticity. This has allowed the U.S. to become the  
22 balancing market cor other relatively price insensitive  
23 markets in Europe and Asia. In those markets, LNG is  
24 largely indexed to crude oil or crude oil products under  
25 long term bilateral agreements.

1           One of the key draws on the U.S. markets, and I  
2 sense the concern in some of the questions, is the seasonal  
3 requirements of both Europe and Asia. And, hopefully, I'll  
4 talk a little bit about why. That's not all bad news for  
5 this market.

6           I think the emergence of the U.S. market has  
7 been a huge boom, overall, to the LNG business. We've seen  
8 13percent compounded annual growth in supplies. Just  
9 between '05 and 2010. Much of that new supply is at least,  
10 nominally, contrasted to the U.S. market.

11           This is a little nuance that I'll take you  
12 through because I think how gas is contracted here, where it  
13 ends up going on the bay, is obviously a key area of  
14 interest.

15           Shown here in this graph is a global balance.  
16 It's constructed by BG for 2010 based upon Wood Mackenzie's  
17 supplied the forecast for that year. We've aggregated all  
18 the various market demand curves into this forecast.

19           To assess global seasonality, we took the  
20 afterward 2006 imports from the various markets by month and  
21 then superimposed its approved seasonality on the Wood  
22 Mackenzie and volume demand forecasts for each country or  
23 region. So you are seeing the seasonality of the Asian  
24 markets.

25           The North American markets comprised largely of

1 the U.S., but also including Canada and the west coast of  
2 Mexico, is it seems to import the residual volumes after all  
3 other markets are served. It is the white space on the  
4 curve. North American imports in 2010 under this analysis,  
5 are estimated to 2.6 Tcf per year. A substantial supply.  
6 How does that gas flow?

7 In 2010, we show about eight Bcf a day of gas  
8 with three Tcf total. Contrasted to the North American  
9 markets, allowing the U.S. to balance the short position in  
10 other markets to over about .4 Tcf, which is about a Bcf a  
11 day. Of course, it doesn't flow on a regular basis met from  
12 a North American contracted position. However, the  
13 seasonality of the open market is such that there's still an  
14 in flow of spot volumes in the summer peaking at two Bcf a  
15 day above contracted volumes in September. This is based on  
16 2006 seasonality.

17 The level of in flow into North American will  
18 decrease as global supply demand tightens, likely in the 11,  
19 13 time frame, and will increase as Japan, Korea and Taiwan  
20 come into balance, likely in the 2015, plus.

21 So, the overall shape of this curve, although the  
22 shape of the curve won't change, its relative location to  
23 total contracted supplies will vary based on global supply  
24 demand balances.

25 This is a look at U.S. imports today. We

1 highlighted Lake Charles, which is the top one in orange  
2 and Elba Island because that's the two terminals where BG  
3 operates.

4           You can see from this profile the exact  
5 balancing mechanism I just described very much in  
6 evidence. U.S. imports throughout 2004 to 2006 averaged  
7 about one Bcf a day. With the highest volumes generally  
8 observed in the summer.

9           If you look at 2007 in a little more detail,  
10 you'll see that we have warmer than usual weather in Europe  
11 and Asia, which left these markets particularly full from  
12 storage and inventory perspective, withy little interest in  
13 pulling summer volumes, even at their electively low Henry  
14 hub price relative to -- as a result, U.S. imports run about  
15 three Bcf per month, double over the last three years.

16           This once again switched in mid July as a result  
17 of the Japanese earthquake which shut down about 8.2  
18 gigawatts of nuclear capacity in Japan. This balancing  
19 function is very much with us and I think Lake Charles has  
20 pretty much been the balancing market, really, since we  
21 started pulling significant volumes. You know.

22           Year to date, and about 2.4 Bcf a day, at least  
23 through September. So it's a substantial contribution.

24           I looked at the questions that we were asked to  
25 address and you get the feeling that there's a perception

1 that the glass is somewhat half empty. And I'd like to say  
2 when I think, actually, of the emergence of the U.S. as a  
3 source of liquidity and the contracted market has been very,  
4 very powerful and very important market.

5 On this chart, we have BG's estimate of  
6 contracted volumes with top line. That's the, our own  
7 analysis showing what is actually contracted or proposed to  
8 be contracted into North America. The dark gray and light  
9 gray are Wood Mackenzie's estimates of actual imports over  
10 this period. You can see that we see a portion of the U.S.  
11 quantum coming through Canada and through Mexico.

12 You can see that the U.S. as an LNG market is  
13 forecast to overtake Japan, currently the largest importer,  
14 to become the world's largest LNG consumer around 2014 based  
15 on a little under a decade of real growth. That's  
16 phenomenal. I think one of the prior panelists mentioned  
17 the infrastructure that's required, and it's tremendous.  
18 And, similarly, the contracting model probably is due to the  
19 balancing role, which may be a little unsettling from your  
20 position, but it's actually allowing these volumes to flow.

21 I think the other thing this market is so  
22 efficient, that it's already reacting to the seasonal  
23 component of LNG suppliers. I think there's 200 Bcf of new  
24 storage which will be added, 75 percent in the Gulf just in  
25 this year, through '09.

1           So, the seasonality of the market is adding  
2 storage.

3           It could be argued, in fact, we do argue that  
4 because of the unique balancing characteristics of the U.S.  
5 market, that is what has allowed it to attract volumes in  
6 the first place and grow at such an unprecedented rate. We  
7 have the most efficient dynamic gas market in the world.  
8 And when you talk to my shareholders in the U.K., it's very  
9 difficult for people coming from different models to quite  
10 appreciate just how dynamic this market really is.

11           And that's the sum city of the Lake Charles.

12           MR. WRIGHT: Thank you, Ms. Spomer.

13           Mr. Grant.

14           MR. GRANT: I am going to take a little bit  
15 different task on this than I normally do in presentations.  
16 The six to seven minutes you said we could have, Jeff, will  
17 be sufficient. I don't usually while I'm not here.

18           Well, what I want to talk a little bit about, I  
19 got a couple of slides, but I want to go back to the  
20 questions that you wanted answered.

21           I want to thank the Chairman and the other  
22 Commissioners for giving us the opportunity today. What I  
23 thought was interesting, and I'll talk a little bit about,  
24 is the Chairman mentioned long term contracts. There's a  
25 little bit of gray hair between us. I also remember the

1 '80s.

2 I know when I was practicing here in the  
3 contracting, you know, pay for pay contracts and long term  
4 contract became four letter words in the U.S. gas industry.  
5 And in the LNG industry. That's how business has bound us  
6 under long term tinker pay (sic), high tinker pay.  
7 Contracts with lots of financial resources behind them.

8 It's not a market, it's not a milieu U.S. today,  
9 for the most part. I think it's also important to keep that  
10 in mind as we're moving forward.

11 Let me point out just a couple of things.  
12 Frankly, right now, when you look at this, it is even  
13 harder to see mine. When you show regas supply, the simple  
14 message I'm trying to get across with this is you're in a  
15 seller's market today. Regasification capacity depending on  
16 who you listen to represents between ten and maybe 15  
17 percent of the total cost of the value chain.

18 Because of that, if you are a producer, Suez is  
19 not BGH. You're more likely to be long in that part of the  
20 value chain. Regasification of shipping rather than  
21 standing significant part. It helps clean production,  
22 liquefaction, and those type of things.

23 It's always been kind of normal to make sure  
24 those pieces are always in place. But what you have today  
25 is a huge over capacity regas capacity, obviously that

1 reached to what we believe is a seller's market today.

2           You've got national oil companies much more  
3 involved in the industry. The majors and everybody else.  
4 It's changed the industry pretty dramatically. During that  
5 period of time.

6           The second time that you talked about this a  
7 little bit, is you got a market that traditionally has been  
8 dominated not by the U.S. in the LNG business. Basically,  
9 the next two slides are showing that while the industry is  
10 fairly significant worldwide, the U.S. has been a small part  
11 of that.

12           We all agree the U.S. would a larger part of it  
13 going forward, but as you look at country and regional  
14 imports, what you are seeing is an industry, frankly, that  
15 was built and dominated by the Asian markets. The European  
16 market has grown, as well, but you also have a pipe and a  
17 group of people, which is the Asian market, that depend on  
18 LNG, just as we depend on pipeline gas and domestic  
19 production here.

20           It's kind of goes into the things we're talking  
21 about. This is the slide that's showing the number of  
22 imports. But, again, it's a cultural difference. Safety is  
23 another cultural difference, as well. LNG is considered a  
24 natural part of the industry in Osaka. Osaka has a museum,  
25 effectively a science museum at their terminal in Osaka and

1 they have school kids and tourists coming in there all the  
2 time.

3 In the U.S., so culturally, you got a little  
4 different feel LNG worldwide.

5 If I can go back to the questions that the  
6 Commissioner asked, how does the U.S. currently obtain the  
7 LNG needs. There's two different markets in the U.S. Betsy  
8 talked a little about Lake Charles and some of the things  
9 today. But, frankly, what you have are two different buyers  
10 in the U.S.

11 You've got the liquid market buyers, people who  
12 can substitute Lake Charles, who can substitute pipeline gas  
13 and you've got buyers -- the non liquid market, which is the  
14 Everett facility that we operate up in New England, where,  
15 frankly, substituting pipeline gas where most of that LNG is  
16 not possible.

17 You've got a region up there that's very  
18 dependent on liquid. You've got deep base sendouts that's  
19 in excess of 40 percent coming out of LNG facilities. It's  
20 not regularly substitutable. Going back to the discussion  
21 Mr. Harvey had about basis and things in the previous panel,  
22 it also means you get more of a premium for it. Your payoff  
23 is less flexibility, less trading ability. But, generally,  
24 a higher price because you are in a less fluid market.

25 So, if you can have people guy, you've got

1 companies that buy in non liquid markets. And if you take,  
2 you've got a long term contract with LNG, most of the gas  
3 comes into that market, it supplies long term downstream  
4 markets, the buyers tended to have significant pipeline  
5 capacity right downstream of the terminals. And it's at  
6 long term. Really not looking to trade out of that facility  
7 all the time.

8           It's been the up to this long term relationship  
9 and customers, and so gas that's bought for that market, and  
10 I would argue that's almost more a traditional market, which  
11 is I've got customers downstream, I've got to have the gas,  
12 I'm not looking for liquidity, I'm not looking for the  
13 ability to trade that type of market, but you also have  
14 another market that's been good to the U.S. today. That's a  
15 really good market. It's the Lake Charles facility.

16           Its gas prices in the U.S. are two dollars and  
17 gas prices in Japan are 22 dollars. Okay, the U.S.  
18 probably doesn't need a lot of LNG if gas prices are two  
19 dollars. Another market might. And you can substitute  
20 other things.

21           When you look at the markets in the U.S, it's not  
22 one homogenous LNG market or one downstream market. It's  
23 kind of a mix between the two. Again, what you're trading  
24 is flexibility in a liquid market. That's a price advantage  
25 because of basis of the other markets. Different types of

1 markets.

2           Basically, what you have is things coming out  
3 onto long term contracts. Buyers should have long term  
4 contracts. Also, it is important to not confuse somebody  
5 that has a long term cash supply contract which happens to  
6 be NYMEX price-based in the contract if this gas is going to  
7 come to the U.S. If you look at current prices today.

8           And as Betsy accurately pointed out, you've got  
9 most of the world buying LNG on an oil basis and you got oil  
10 at 90 dollars plus. We've got NYMEX gas today at less than  
11 eight dollars. We've got quite a bargain for what we're  
12 paying for gas in the U.S. And so if you have flexibility  
13 built into that contract, your producer who owns that gas,  
14 or whatever, you might have a 15 dollar market one place and  
15 an eight dollar market here.

16           All you're looking is at spread, and that  
17 happens. That's the world LNG market as it exists today.

18           The contrary is true, too. If you go back three  
19 or four years, you go back to times where the oil market was  
20 the other way. And intentions to bring it into the U.S.  
21 because it could be coupled the other way. And it happened  
22 both ways over a period of time without knowing exactly what  
23 those time periods are.

24           The next point is thee a need to change the LNG  
25 procurement in the U.S. And, frankly, it depends on what

1 the Commission is looking for.

2 I agree with Betsy. I think you probably have  
3 the most transparent liquid market in the world right now on  
4 the gas side of the request. I personally see little chance  
5 of the Asian market, for example, adopting NYMEX as their  
6 pricing structure going forward. There are spots of  
7 Japanese funds has nothing to do with the Japanese market.

8 So, you have a disconnect because you've got  
9 different pricing points, as well. You can argue that  
10 today you're going to get as much gas or LNG in the U.S. as  
11 the market is willing to pay for it in those prices. But I  
12 think there's other, there's a significant difference in the  
13 worldwide LNG business is the way gas is bought.

14 And LNG is bought, it's not about whether it's  
15 oil or whether it's NYMEX priced. And that is when you look  
16 at the US. generally and it's not an only case because it  
17 depends on what your downstream requirements are and what  
18 your contracts are.

19 Generally, in the U.S., you are not going to buy  
20 LNG at ten dollars in the world market if NYMEX is seven  
21 dollars. You're not going to buy it until at a loss. You  
22 don't have utility markets here. You can't ever get in with  
23 the other suppliers and say I'm going to buy high and sell  
24 low and make money.

25 The Asian market is not that same market. It's

1 more of a traditional utility market that says if I've got  
2 to have ten cargos, which is exactly what just happened in  
3 Japan, there's nuclear facilities falling down. If I have  
4 to have LNG people in Tokyo, I can manage it with my other  
5 costs. But I have a utility obligation, I've got a public  
6 service obligation, then I will pay whatever the market  
7 happens to require me to pay.

8           Whether that's NYMEX based or oil based doesn't  
9 really matter. So, that is a handicap for us to put gas or  
10 bring gas up because it's not a market that everybody is  
11 buying the same. And the Japanese is not going to buy  
12 because it doesn't clear that market price when they can get  
13 regulatory recovery on those type of things.

14           Europe is kind of a mixing bowl. If you have  
15 some countries that have the public service requirement but  
16 you don't have this transparent worldwide market, that's out  
17 there with one pricing and you can go out and buy.

18           The other thing I think is that generally,  
19 contracts, even today are committed to a market. In  
20 theory, the traditional LNG market has been I've got a  
21 liquefaction facility. And I've got ships and I've got a  
22 regas facility and it goes back and forth. It's high take or  
23 pay. And the gas moves to that.

24           And if it's going to an Asian market, generally,  
25 they're not going to release that gas unless they have a

1 physical need for it. Some types of pricing, but not very  
2 much. And in the world what you're seeing now with LNG,  
3 you're getting particularly sellers, whether it's a national  
4 oil company or the countries that these are located in are  
5 saying, well, the U.S. market is eight dollars and the  
6 Japanese market is \$20, I want more of 20 and less of the  
7 eight, so I want flexibility.

8           You're seeing that in the bidding processes  
9 where you want to ensure any kind of upside. They want  
10 diversion, they want to control everything. It's volume in  
11 the market place, as well.

12           So, even though the industry has long term  
13 contracts, you're starting to see more contracts as Betsy  
14 alluded to, but they're going to move other places. And now  
15 I'm running out of time.

16           What is needed to encourage contractual  
17 arrangements for LNG supply that would meet U.S. demand?  
18 The reality is if the demand is there, they are willing to  
19 pay the price and it's going to attract buyers. Betsy said  
20 we've got an over capacity situation and a regas capacity,  
21 particularly regard from Mexico. The gas will come here if  
22 we're willing to pay that.

23           But what that world price is, again, with this  
24 balance in terms of how gas is bought, you may not be able  
25 to get it in here because somebody else can always buy more

1 rather than lose money.

2 Is it a spendable supply source? The answer is  
3 yes. Otherwise, the Japanese, the Koreans, the Europeans,  
4 and, frankly, the people in Europe wouldn't have that kind  
5 of reliance on LNG. It is very reliable. But, again, it's  
6 dependent on how committed we are as a country to buying  
7 this in long term contracts, high tinker pay contracts to  
8 meet world demand.

9 How is the U.S. role in the world? Oh, I  
10 absolutely agree with you. I think it's being, I hate to  
11 call it the dumping ground, but it's the last we hear of  
12 market right now. And if you look at the forecast, you see  
13 Europe, you saw Asia and the rest of it comes to the U.S.  
14 That's good news. The bad news about that is as should  
15 respond, you may not get the gas when you want it so we had  
16 better have storage in place.

17 Because if it's 25 percent of U.S. gas demand  
18 annually, it will be 50 percent in the summer and ten  
19 percent in the winter. That's a different market to meet.

20 Thank you.

21 MR. WRIGHT: Thank you, Mr. Grant. That was less  
22 than six to seven minutes.

23 Mr. Allen.

24 MR. ALLEN: Thanks. I have to plead guilty on my  
25 slides. I didn't realize how this room was set up. It's a

1 little difficult to see some of these slides.

2 I decided to focus my presentation on just  
3 answering a hypothetical question, which actually hasn't  
4 been so hypothetical.

5 A number of people have asked me why do all  
6 these LNG guys say it's a national emergency and you give  
7 all these terminals and then you know they're not using  
8 them. And I got this puzzling question from a number of  
9 people, particularly in government. And people in policy  
10 positions.

11 The answer is I think the flexibility answer.  
12 But let me tell you how the dynamics seemed to work this  
13 year. Because I think this year will be kind of a harbinger  
14 of things to come.

15 The first slide shows you the U.S. imports of LNG  
16 by month. As you can see, in January and February, we  
17 really didn't have much in the way of LNG imports. And then  
18 suddenly we got hit by a tsunami of LNG imports in March.  
19 That lasted through August. We now have reverse tsunami  
20 hitting the U.S. with October at less than a third of what  
21 the peak months have been.

22 One way to look at this is to set the prices of  
23 gas in the Atlantic based market - we're taking here  
24 strictly the Atlantic basin because that's the market the  
25 U.S. presently operates in.

1           The B line is the national balancing point.  
2   Excuse me, is the Henry hub price. The red line is the  
3   national balancing point. The U.K. price of gas. That's a  
4   comparison a lot of people make. I don't like the  
5   comparison all that much because it's a little bit apples  
6   and oranges. But because everybody looks at it, let's look  
7   at it. I'll address that issue in a minute.

8           In February, what happened with the perception  
9   that suppliers in Europe had are all kinds of nightmare  
10   scenarios after the bad dream.

11           If you remember, there is a few of the Gasprom is  
12   going to get into another fight with Belarus, Ukraine  
13   facility wasn't going to be able to perform in the U.K.  
14   because there had a higher risk new pipelines to Norway  
15   won't operate at their potential. So, Europe went into last  
16   winter driven by fear of not enough gas supply.

17           But along about the beginning of February, that  
18   fear disappeared. It was a mild winter. The gas pipelines  
19   worked hard. Gasprom didn't get into any fights with  
20   anybody. So they were stuffed with gas.

21           The price went way down. Normally worried about  
22   adequacy of supply for the summer, so our price went way up.  
23   Consequently, use for our increase in LNG imports, it didn't  
24   happen overnight. They can't happen overnight.

25           So, what's a better analysis? What's a better

1 element to use? The element that I have started to use has  
2 been to track the futures prices and look at the futures  
3 clause. The '02 futures curve differentials. We plot the  
4 line of futures of gas in the U.S. and we track the ICE U.K.  
5 futures as a stand in for northern European prices.

6           When you look at those two curves and we look at  
7 the difference between them, the lower curve is the  
8 viewpoint of the world, taken in early January. What that  
9 said was that there was about a dollar to two dollar  
10 advantage to coming to the U.S. with gas during the period  
11 March through August. But because of the change of  
12 perception in the markets during February, all of a sudden  
13 that red line, there was a much greater incentive to bring  
14 gas in the future into the U.S. That's exactly what  
15 happened.

16           And this situation that you see here has been  
17 reversed in July and August. With the differentials how  
18 switching around to a very strong incentive to take gas to  
19 Europe. The fact they don't have any place to put is  
20 another issue.

21           At these moments in time, the incentive was to  
22 bring the gas here. Now, BG or Suez can't make a decision  
23 tomorrow morning to have LNG show up at their terminal. It  
24 takes about a month to six weeks to make the arrangements.  
25 So, you saw the price, the cash price is reversed in

1 February. You saw the reversals of the futures markets, you  
2 saw the spreads occur, and it took about a month for that  
3 tidal wave to get here, but it did get here in March.

4 Again, it took about a month to reverse that.  
5 With decisions then starting to being made in July and  
6 August not to bring the gas here, but to take it elsewhere  
7 and to drop a subsequent drop-off.

8 As futures grew, the spreads between those  
9 futures grew. Variance structures to watch.

10 And that's what I thought I'd focus on. Thank  
11 you.

12 MR. WRIGHT: Thank you, Mr. Allen.

13 Ms. Outtrim.

14 MS. OUTTRIM: Also, good morning. Thank you. I  
15 appreciate the opportunity to address you.

16 I am going to move forward. The first slide in  
17 the presentation really just illustrates what both Betsy and  
18 Richard have talked about. That's the seasonality of LNG  
19 imports. It's a forward looking slide of 2010 time frame.  
20 And it shows that in the Atlantic basin, the U.S. will be  
21 receiving more LNG in the summer months, quarter two,  
22 quarter three and then not as much in the winter months.

23 The U.S. underground storage ability really  
24 attracts those cargos in summer and be able to store that.

25 When prices are lower in the European and Asian

1 markets, they then have big weeks in the fall and winter  
2 months when those cargos get premium prices in the European  
3 and Asian markets. The bottom line, the U.S. currently  
4 obtains the LNG that it needs largely through price. The  
5 higher price, the trend will continue in the future as  
6 prices will dictate mostly where those cargoes will go.

7 I also note that this slide shows that there's  
8 more liquefaction capacity, roughly 36 Bcf per day when  
9 there is actually consumption, which is about 32 Bcf a day  
10 in these markets. So, there's no shortage of liquefaction  
11 available.

12 The next slide really regasification capacity  
13 around the world is built or sized for peak utilization.  
14 Because of the big swings in seasonal demand and relative  
15 lack of storage in the other countries, this excess regas  
16 capacity is a way for them to deal with those swings.

17 Asia has a capacity of about 2.4 times its  
18 consumption. Europe is a little over three times its LNG  
19 consumption.

20 In the U.S. by 2010, we'll be at about 1.8 times  
21 our consumption. Is that adequate for the U.S.? Time will  
22 tell. We do have the underground storage and other storage  
23 capabilities here in this country, so we're a little bit  
24 different.

25 But as LNG importation grows, obviously, in the

1 U.S., both underground storage and LNG capacities are going  
2 to need to expand.

3 Now, the supply in the Atlantic basin is diverse  
4 and secure, answering one of your questions. Here we have  
5 the various LNG projects, but are out there and there is  
6 additional liquefaction capacity available to the market for  
7 the next 12 years, all with the various middle eastern  
8 suppliers.

9 Trinidad, Norway, Equatorial Guinea, Egypt and  
10 Algeria play a large role in supplying Europe and North  
11 America. But what this slide's emphasis is in the 2010  
12 time frame, there's about 12 Bcf a day of LNG that can  
13 access that Atlantic basin that has flexibility in  
14 destination. There are other contracts in addition to that  
15 12 Bcf a day. That provides for flexibility in destination  
16 depending upon agreement between the contractual parties.  
17 And, of course, that agreement would largely depend on  
18 parts.

19 So, you are seeing this system come long term  
20 point to point, destinations in the LNG market to a more  
21 price related market. Suppliers have moved away from  
22 depending on these long term contracts to favoring the  
23 shorter stop deals. And, really, unless they need funding  
24 for their projects, they are not going with these longer  
25 term.

1           Indeed, in the U.S., no large LNG buyer, utility  
2 or industrial, has contracted to bring LNG to the U.S.  
3 That's contractually the way things stand. Frankly, the  
4 idea that a spot market is going to develop in the LNG area  
5 is past. The spot market is here.

6           FERC has done their job well. The U.S. is now  
7 well positioned to be part of the spot market because of the  
8 number of regas facilities that have been permitted and that  
9 are currently under construction. We are seeing little  
10 reason for suppliers to sell on a fixed price or a long term  
11 contract.

12           Forty to 50 percent of LNG produced is  
13 controlled by non utilities that are motivated to seek the  
14 best price. And price will likely dictate where these LNG  
15 cargoes flow.

16           Its implication for the U.S. market is likely  
17 higher price volatility due to the swings in LNG imports,  
18 which is a function, really, of the rest of the world's  
19 seasonality. With higher volatility, domestic investment  
20 built upstream and midstream, they become more uncertain  
21 possibly inducing investment in those sectors. This,  
22 ultimately, could result in actually higher prices.

23           But to complete development of the world market  
24 for gas, the LNG market is transforming from a regional  
25 market basically Asian specific market to a global market.

1 The LNG chain has developed and expanded worldwide. There  
2 is adequate liquefaction sipping into regasification out  
3 there.

4 The stock market is here and this present both  
5 challenges and opportunities as they change.

6 Thank you.

7 CHAIRMAN KELLIHER: Thank you very much. I'm  
8 going to go with five minutes per Commissioner and then we  
9 end up just about where we should.

10 John?

11 COMMISSIONER WELLINGHOFF: I just have very few  
12 questions.

13 Ms. Spomer, thank you for your presentation.  
14 Curiosity, are we LNG involved? The slide gives the 2010  
15 view of the global LNG balance. I see there is apparently  
16 there is little going to China. Why is that?

17 MS. SPOMER: To date, actually, China has not  
18 contracted, like lot of long term LNG in this time frame  
19 relative to total witness supply. It means a very open  
20 question as to whether China will actually compete against  
21 market prices for LNG.

22 We have the bottom of the market Guangdong price  
23 from northwest shelf and Australia and Pusan from Tengu,  
24 which is what's reflected in this balance. I think there's  
25 very much a question mark as to whether they're going to

1 compete with oil index prices in Japan and Korea in the near  
2 term, and by near term I mean through 2015.

3 COMMISSIONER WELLINGHOFF: Whether they decide to  
4 compete or not, if China decides to start using more gas,  
5 would they have to go and compete or could they get gas from  
6 other sources of LNG?

7 MS. SPOMER: They're aggressively expanding  
8 their domestic gas infrastructure and they had some  
9 significant gas discoveries. I know the recent deal was  
10 announced by Petro China from Gorgon, I believe, that affect  
11 market prices. Buy their intent, as a utility type buyers,  
12 is to average it down. Its domestic supply to meet to price  
13 caps that are currently imposed on them in the market.

14 So, there's a little amount of market priced gas  
15 they could actually do that, yes. That's at 2012, 2013 span.

16 COMMISSIONER WELLINGHOFF: Thank you. That's all  
17 the questions I have. Thank you.

18 CHAIRMAN KELLIHER: Next, Commissioner ---

19 UNIDENTIFIED SPEAKER: Question. Your comments  
20 seems to suggest that the U.S. activity can succeed in  
21 competition for LNG without relying very heavily on long  
22 term contracts. We don't have to adopt the Japanese approach  
23 in order to be successful. Is that a whole reading of what  
24 you said?

25 MR. GRANT: I think with some caveat.

1                   CHAIRMAN KELLIHER: I think the margin mixed  
2 with long term contracts?

3                   MR. GRANT: I think the economic theory you've  
4 just described is perfect as long as you have a market that  
5 is kind of an open -- if the market was the U.S. market, the  
6 answer to that would be we can get as much LNG as we need.  
7 But you're going to have times like the nuclears that just  
8 happened in Japan, where because of the structure we have  
9 here, you can't offset somebody for it. So you're going to  
10 lose those opportunities. Theirs is not necessarily  
11 economic decision as much as a regulatory or some other  
12 decision.

13                   CHAIRMAN KELLIHER: It would be like in the end  
14 of Ohab. The Spanish were paying Henry hub plus something.  
15 And that's hard competition for us because they were upping  
16 -- because their lights go out, they don't -- I just wanted  
17 to supplement what he says.

18                   As I puzzle through that question myself, I've  
19 come to the conclusion that it all depends on what the banks  
20 are comfortable with. If you can't finance development  
21 without the comfort of a long term contract, then you don't  
22 need to. And I think you see that comfort level starting to  
23 come in. Just as it did in the merchant power business.

24                   CHAIRMAN KELLIHER: There's some discussion  
25 about pricing changes. You commented how in Asia LNG's

1 prices linked to oil. Do you think that will remain the  
2 case? Pricing is different in the Asian Pacific markets,  
3 isn't it? Do you think that we're able to continue to be  
4 the benchmark for sitting LNG in the Pacific?

5 MS. SPOMER: You don't really have an  
6 alternative way to value gas in the markets. There's no gas  
7 on gas competition such as we have. I think, certainly, in  
8 the next decade, that's unlikely to change.

9 MR. GRANT: I would agree with that, as well.  
10 The other thing, too, they do substitute gas and oil over  
11 there. So because of that, oil is the competition for the  
12 gas and for their other parts.

13 The other interesting thing in Japan is they  
14 have a very high Btu gas because they can spend more energy  
15 with less volume. Versus over here, we try to keep it the  
16 other way. So, they take a much different view. But I  
17 agree.

18 CHAIRMAN KELLIHER: A number of you, or at least  
19 one, two of you mentioned the national oil companies and  
20 their role. Is that role increasing? What are your  
21 thoughts on the LNG import business as having more change to  
22 it? The national oil companies, are they poor links in the  
23 chain or are they comfortable with just production and  
24 liquefaction?

25 MS. SPOMER: There's clearly a move. You see

1 the Russians, who are clearly interested in developing  
2 downstream marketing capability in their key markets. The  
3 Algerians espouse a similar ambition. So, I think that  
4 clearly there is that intention. Although, I also think  
5 that as they become more aware of how little money there is  
6 in some of the links in that chain, they're more than happy  
7 just to arbitrage highest priced markets against one  
8 another.

9           Who owns the destination flexibility when we  
10 look at gas flows? You assume that shifting from the prior  
11 resource holder. And the NOCs are playing a big role in  
12 grabbing control of that flexibility.

13           MR. GRANT: I'd make two other points. I  
14 absolutely agree with her comment. One of the things, is  
15 when you talk about spot market in the LNG, you need to be  
16 very careful about what spot market means.

17           Spot market as it's being used in terms of gas  
18 moving other places, it's not a spot market. What it is is  
19 gas that's under long term contracts that's going to not the  
20 original market.

21           For example, if BG has gas under contract, and  
22 originally, they thought it was going to Lake Charles and  
23 now it goes to Zubrugge, then that is considered spot gas.  
24 That gas never hit the market. They decided to take it to a  
25 different market. Those are diversions. The actual spot

1 market is really small today in the industry. It doesn't  
2 mean you don't have gas move to different markets. That  
3 this stuff is under long term contract.

4 I don't know any gas, any liquefaction facility  
5 today that has anything resembling, and I'm going to do a  
6 merchant liquefaction facility and not have a long term  
7 offtakes. If you look at the recent pendeers from Nigeria  
8 and those places, they want 20 year commitments. You have  
9 to put financial backing behind it. You've got to put  
10 guarantees, you've got to have ships, you've got to have  
11 this. And that's what's happening.

12 The other word on the NOCs that gets lost in  
13 this when I give you my American view of natural gas, the  
14 overall reserves, it's NPV driven. If I don't drill it  
15 today, I don't get it for 15 years. I want it today.  
16 National oil companies don't look at it quite the same way.  
17 They look at it and say I've got 95 dollar oil, how much  
18 more do I need.

19 I'm going to use up all my resources long term,  
20 so there may not be -- we know there's a lot of gas around  
21 the world right now. A lot of it's not coming to market.  
22 Not for economic reasons, but for political reasons or other  
23 reasons.

24 So, the NOCs are playing a much larger role in  
25 terms of availability of gas supply.

1                   CHAIRMAN KELLIHER: Thanks very much.  
2                   Commissioner Kelly.

3                   COMMISSIONER KELLY: I think you answered my  
4 question, which was going to be it seems to me that in  
5 today's markets, U.S. market would not have any impact or  
6 drive in any way liquefaction. Or is that not true?

7                   MS. SPOMER: Actually, it has had a huge impact  
8 on stimulating new Atlantic basin projects. I was working  
9 on the Trinidad projects, originally, in the 60 percent  
10 sale, and that was the first contracted LNG into the U.S. in  
11 years. We're talking eight Bcf by 2010 of gas contracted  
12 into this market backed by new liquefaction. That's huge  
13 growth.

14                  COMMISSIONER KELLY: But that's the long term  
15 contract market. That's not the balancing market you are  
16 talking about.

17                  MS. SPOMER: When we talk about contracted  
18 volumes in this market, we are talking about contracts that  
19 the buyers like terminal capacity and ability to move gas  
20 and market it into the market. That doesn't mean that I  
21 have 15 or 20 year contract behind us of long term gas sales  
22 agreements. Quite honestly, i the Gulf, you don't need it.  
23 You do have long term contracts behind terminal. Elba  
24 Island, Everett. It's much more of an illiquid regional  
25 market.

1                   COMMISSIONER KELLY: You've talked about the  
2 Atlantic basin and the Pacific basin markets. How linked  
3 are they? I don't think any --

4                   MS. SPOMER: I think there's a perception that  
5 remained, essentially, unwilling to come to terminal the  
6 last few years. This year, we will see almost a Bcf of  
7 Atlantic basin gas go to the Pacific basin. Goldman Sachs  
8 just put out a natural gas update which says what is your  
9 wants is your gets.

10                   Once again, you're talking about markets  
11 utilities. That will pay whatever it takes to buy gas when  
12 they need it. And they won't take it if it's free when they  
13 don't need it.

14                   Now, the other thing to point out, too, is we put  
15 up regasification in the over capacity there. Also excess  
16 shipping today. You're talking about a transit problem that  
17 is significantly different if it's coming from the Atlantic.  
18 The Far East versus here.

19                   However, if you're looking at the Middle East,  
20 Yemen, for example, it's turn left or turn right, there  
21 isn't a big difference in terms of logistics. But because  
22 There's excess shipping right now and other things, you can  
23 make that work. That sometimes gets lost in our industry as  
24 the logistics of doing spot deals and moving ships around  
25 the world.

1 MR. ALLEN: There's a interesting thing that  
2 happened. That may have happened, I want to caution you.  
3 Recently. We track as best we can what ships are doing.  
4 There was a shipment of gas that was headed from Qatar to  
5 Zubruz that may have been diverted, I'm not sure.

6 What's interesting about that ship is it was  
7 not reported going back through the Suez canal as a loaded  
8 ship.

9 Now, I understand this has happened maybe a  
10 couple of times before. But I think this is going to be  
11 something you're going to see more of because of the  
12 liquidity in shipment is growing. And also because of the  
13 ability to devote and swap cargoes.

14 What I think happened was because of the  
15 distances involved, you have the Japanese and the South  
16 Koreans, both needing to hit the market for ore LNG  
17 supplies. Somewhere along the way, the empty backhole was  
18 taken advantage of.

19 Currently, the traffic through the Suez Canal has  
20 increased substantially of LNG ships over the last year.  
21 So, the linkage between those two markets is growing. But  
22 the distances and the 500,000 dollar charge to go through  
23 the canal, is somewhat of a disincentive to that happening a  
24 lot. But a buckhold cargo makes a lot of sense.

25 You'll find that Middle Eastern section is a

1 significant amount of capacity in the 2010 time frame in  
2 either direction. And it will go either direction.

3 COMMISSIONER KELLY: It can go either direction  
4 because what's the production area? The production area it  
5 goes either way. So, whether there's liquidity in shipping.  
6 And but liquidity in shipping adds to the ability of one  
7 basin to compete, if you will, with the other.

8 MS. OUTTRIM: Right. But I also think it's  
9 important to remember, we talked about cargoes going to  
10 different places. If cargo was from the Middle East to  
11 Japan, for example, and you say, well, okay, now it's going  
12 to be released, other parties have to agree to release that  
13 before it hits the market. You talk about destination  
14 flexibility, there can be destination flexibility in the  
15 contract. If it's a long term buy-sell type of thing, then  
16 you got mutual consent. If it's your own equity, you can  
17 take it wherever you want.

18 We kind of use the terms in our industry to be  
19 synonymous and they're really not.

20 COMMISSIONER KELLY: How is the differing values  
21 in the national currencies affect th market? In 50 years or  
22 less.

23 MS. SPOMER: I think the relatively cheap dollar  
24 is part of the warm up in oil prices. So, another thing we  
25 do is, I don't know whether we're selling Japan, Europe or

1 the U.S. system nominated in U.S. dollars.

2 COMMISSIONER KELLY: Does that, in taking that  
3 fact and transferring it to our demand, the impact of our  
4 demand on the market, is there direct impact, then there  
5 wouldn't be an impact.

6 MS. SPOMER: May keep prices relative to U.S. gas  
7 prices, which are somewhat formed regionally because of the  
8 impact on higher oil prices to distort the regional  
9 differences in pricing because of the low dollar.

10 COMMISSIONER KELLY: Is that the Atlantic basin  
11 futures spread do you think this is a viable model? Or do  
12 you think that is a short term, it was linked in the short  
13 term, but do you see it being a viable order for contract  
14 delivery in the long term.

15 MR. ALLAN: I think as Rick says, you decide  
16 what to do if your equity gas. And I think as far as I can  
17 see, no part of LNG arrives in the United States that  
18 doesn't know when it's going to get paid for. And that  
19 means that everything is hedged in those futures markets.  
20 The gas is coming here based on those futures  
21 differentials. And I see that as the way it's going to be.

22 At the same time, you're going to have those  
23 markets striving for convergence as more and more liquidity  
24 comes into the market. Which should remove some of the  
25 volatility from the market, but you're still going to see

1 the futures market dictating where the gas goes.

2 Then if I could add one thing, if you took that  
3 back three years, you'd see a flip in the spreads. It does  
4 go back and forth.

5 COMMISSIONER KELLY: Thank you all very much. I  
6 could ask 57 minutes more of questions.

7 (Laughter.)

8 CHAIRMAN KELLIHER: Commissioner Moeller.

9 COMMISSIONER MOELLER: I've got about two  
10 minutes left.

11 CHAIRMAN KELLIHER: Feel free to take five.

12 (Laughter.)

13 COMMISSIONER MOELLER: Mr. Grant, one of your  
14 charts showed the incremental LNG and which regions were  
15 importing it across the year -- pretty interesting. Japan  
16 spiked up in August. What's the reason for that?

17 MR. GRANT: I don't have it in front me. Is it  
18 August of 2000?

19 COMMISSIONER MOELLER: It's 2005.

20 MR. GRANT: You just show seasonality. It  
21 depends on what the demand is over there.

22 For example, as Zach put it, when you look at the  
23 imports coming into the U.S. for the summer, it makes sense  
24 because it's a high value market. When they had a nuclear  
25 incident in Japan, all of a sudden it just fell off the

1 table, because you had buyers who said, wow, I'm buying  
2 against the NYMEX price, I've got to get this in there  
3 because I don't have a choice. A lot of that stuff just  
4 moves because of the storage, because of what kind of winter  
5 they have, and those kind of things.

6 MS. SPOMER: They are developing a summer  
7 peaking air conditioning market in Japan. But Taiwan is  
8 totally a summer peaking. And we're seeing a new terminal  
9 in Hong Kong which is also going to summer peaking. You  
10 will see a little balancing to that seasonality. They are  
11 also having the urgent missioning growth that we are having,  
12 too. Interesting.

13 I was going to ask some questions that  
14 Commissioner Kelly asked about the interplay between the two  
15 basins, so I won't. But, briefly, your crews are tied into  
16 LNG. This is not on the list of questions we asked you, but  
17 I'd like to each of your quick observations to the extent to  
18 which you sense domestic perception of LNG is changing.  
19 Either positively or negatively.

20 We are projected to have quite a few more  
21 gasification terminals.

22 MS. SPOMER: That's interesting because we  
23 really had to prove LNG as a supply source in the southeast  
24 at Elba Island. There was some skepticism. I think  
25 reliable operations, a couple hurricanes in the Gulf and

1 it's a key part of the southeast supply mix today. It's a  
2 great story. It's a great piece of the supply mix, but I  
3 think performance sells to the buyers.

4 MR. GRANT: I agree with that. I think that  
5 hopefully some of the issues related to safety and things  
6 like that have calmed down a little bit. Then maybe we can  
7 look at it like the rest of the world does, which is its  
8 energy, it's got value, it comes in and it's handled very  
9 safely. I think those are possible.

10 Most of the feedback I get is having been on a  
11 distribution company and actually practiced before FERC when  
12 I was lawyer, it's inevitable in terms of the supply. We  
13 thought that in Elba and Lake Charles and none of them were  
14 built at that time. But I think with the world market out  
15 there with it being developed, it's going to be a normal  
16 part of the mix of supplies that we have.

17 MR. ALLEN: The one thing I would draw a  
18 distinction on in public reaction -- being from Rhode Island  
19 myself -- I think there's a difference between competing  
20 uses of assets. I think it's a very different thing to  
21 look at the competing uses of Narragensett Bay versus the  
22 competing uses of the Gulf of Mexico. And I think you need  
23 to separate the wheat from the chaff in terms of looking at  
24 the public reaction to the proposal of bringing in an LNG  
25 terminal. The Tim Riley kind of thing is one thing, but

1 people who are concerned about disruption to their business,  
2 to their economic viability, that's another issue that has  
3 to be looked at very carefully.

4 I think the hyperbole is kind of falling away.  
5 That's good. I think there do remain concerns about  
6 competing use of assets.

7 MS. OUTTRIM: I guess my comments would be  
8 similar to Zach's. I think that a lot of the consumer LNG  
9 safety was really masking the underlying concern, which is  
10 we don't want a large industrial facility in our area. To  
11 that end, I think you still have significant opposition in  
12 the area, but want to keep the fishing village type of  
13 approach and don't want large industry in their  
14 neighborhoods.

15 To that, the Gulf coast has been very welcoming  
16 because they understand large industrials and there just  
17 isn't the population. I think that's kind of what you see.

18 COMMISSIONER MOELLER: Thank you, Mr. Chairman.

19 CHAIRMAN KELLIHER: Thanks very much. I thank  
20 the panelists. I hope you will join us for lunch later on.

21 I guess we'll call the third panel now.

22 (Pause)

23 MR. WRIGHT: I will just mention that our final  
24 panel will concentrate on the natural gas infrastructure  
25 that needs to be built to meet our natural gas demand.

1 Complicating such activity is the lack of skilled labor,  
2 expensive materials, access to adequate capital and  
3 landowner opposition.

4 The members of this panel that will address these  
5 issues include Sam Brothwell, managing director Equities  
6 Research Wachovia Securities, Scott Parker, president  
7 Natural Gas Pipelines at Kinder Morgan, Martha Wyrsh,  
8 president and CEO, Spectra Energy Transmission. And Brad  
9 Kamph, president Interliance Consulting, Inc.

10 Mr. Brothwell will open up.

11 MR. BROTHWELL: Thank you very much. I  
12 appreciate the opportunity to be here today.

13 One of the problems with going on the third  
14 panel is that you found all the brilliance that you had  
15 when you were putting your paper together, your thunder gas  
16 been stolen. I will try to keep this five to seven  
17 minutes. I read it to my cat shortly after my daughter  
18 fled the room. The cat went to sleep, but I did come in  
19 under seven minutes.

20 I think we can all stipulate to the fact that  
21 natural gas is obviously a very vital piece of America's  
22 energy chain. We certainly heard that today. I would  
23 emphasize that it does exist in abundance in our country.  
24 And for that reason, I think one of the things that  
25 investors, the constituencies I represent, find particularly

1 interesting and attractive about gas is that it is a  
2 domestic resource. I'm not going to imply that capital is  
3 necessarily patriotic. But it is sensitive to the risks  
4 that abound around the world today.

5 So, domestic gas is attractive. It is also a  
6 growth resource. Oil production peaked years ago, but as we  
7 all know, there's a massive amount of untapped gas reserves  
8 in both North America and around the world. And the current  
9 price to economic growth globally and technology have made  
10 it much more viable in this environment.

11 Finally, of course, that growth exists on both  
12 sides of the well head. I think there is a perceived need  
13 and opportunity that stretches into the hundreds of  
14 billions of dollars.

15 This panel and FERC of course are most interested  
16 in the logistical land pipeline storage in midstream. The  
17 investors are attracted to these assets because of the  
18 combination of strong growth and I think appropriate, risk  
19 adjusted return on capital, underpinned by the recent  
20 forward looking and apolitical regulation I think has  
21 characterized this agency for many years.

22 In that realm, I would urge the Commission to  
23 stay the course. Capital does need to flow to connect the  
24 American consumer with new sources of natural gas, whether  
25 we're talking about LNG, Rockies gas, shale gas, and so

1 forth. The capital is flowing today and I think it will  
2 continue to do so if the current risk reward relationship is  
3 maintained.

4           Investors do have some concerns. Just, I will  
5 just take a moment to share a couple of those with you.  
6 Obviously, heading into an election year, regulation and  
7 politics are on everybody's mind. At the state level, we've  
8 seen some rate orders coming down with a general downward  
9 trend in allowed return on equities. Some at or below ten  
10 percent.

11           I think that's a level that doesn't adequately  
12 take into account the risks associated with committing large  
13 sums of capital over many years. Of course, the states  
14 regulate the LDCs, but I would argue that the pipelines,  
15 particularly in terms of recontracting are even a riskier  
16 investment proposition in this day and age.

17           Federal regulation has historically reflected a  
18 very appropriate risk adjusted capital structure and  
19 commensurate return on equity. This Commission has also been  
20 proactive in granting market based rates and nurturing the  
21 settlement process which I think speaks to the stability of  
22 federal regulation.

23           However, as to the recent -- while it was a  
24 one-off situation, a recent order in Kern River with  
25 somewhat lower than perhaps historic average return on

1 equity of 11.2 percent was definitely noted by investors.

2 Investors are also keenly interested in the  
3 master limited partnership structure. I don't need to tell  
4 this Commission that that has become perceived as a very  
5 attractive tax efficient ownership vehicle. Arguably,  
6 superior to the conventional C Corp.

7 I think this importantly has given the industry,  
8 the pipeline industry at a critical juncture a powerful new  
9 source of capital at a time when investment is clearly  
10 needed.

11 I think this Commission has clearly recognized  
12 the importance of the MLP in the capital formation process  
13 and has displayed leadership in the face of some challenges.  
14 The recent policy statement acknowledges the mainstreaming  
15 of this structure and the appropriate confusion of  
16 partnerships in the cost of equity capital.

17 We would like to concur with the policy  
18 statement. I do question the capping of the implied yield  
19 and reported earnings versus after cash distribution. And I  
20 would respectfully submit that to market. Price of these  
21 securities on the basis of the actual yield from investment  
22 in the pipeline. Also been underpinned by the official time  
23 recertification and the process for new and expanded  
24 facilities. And I would encourage the Commission to strive  
25 to maintain the tenor of those processes.

1           We certainly have heard a lot this morning about  
2 the importance of natural gas, particularly as a bridge or  
3 adjunct consideration fuel. That cannot only be a bridge of  
4 fuel, but a facilitator to the development of renewable  
5 resources, inside management. All of which I think are  
6 going to be very important in addressing not only our  
7 future, but address environmental concerns what we have.

8           I think demand side management, renewable and so  
9 forth, we can bring a lot more capacity out of the existing  
10 electrical infrastructure we have. I think there's no  
11 question that the demands on electrical infrastructure we  
12 heard mentioned this morning to protect for the  
13 electrification of our transportation system, hybrid  
14 vehicles, and so forth. That's going to put additional  
15 strain on that.

16           Of course, the NERC study referred to somewhere  
17 on the order of a 40 percent increase in electrical demand  
18 in this country by 2030 as our economy becomes more  
19 electrical intensive.

20           So, I think all of that speaks to what we need  
21 most long term when it comes to addressing those future  
22 resource. I think we have be mindful about the  
23 complication from leaders for gas and the upward pressure on  
24 prices to existing gas consumers, but I am increasingly  
25 convinced that leaving gas out on the policy supply equation

1 would be tantamount to courting disaster.

2 In that regard, in closing, I believe it's more  
3 important for all constituencies that folks stay the course  
4 of locating the development of pipelines towards another  
5 infrastructure bringing natural gas to market.

6 I even challenge the Commission to raise its  
7 profile a bit on this issue. I think it's mostly put to the  
8 people assembled in this room that natural gas is an  
9 abundant domestic resource. The coldest of the fossil fuels  
10 and I think we can all stipulate to that. However, the  
11 public perception is perhaps somewhat different.

12 Suggesting that gas is in short supply. But it is not a  
13 domestic fuel. It belongs in the same environmental bucket  
14 as oil and coal.

15 I think legislative restrictions for accessing  
16 new supplies somewhat are bitten by those misperceptions.  
17 It's not in the perview for this Commission to legislate,  
18 but I would submit that as a regulator focus on itself to  
19 be balanced and efficient and driven by fact to run over the  
20 politics.

21 And apart from standing as an example to other  
22 regulatory agencies that may not share some of those  
23 attributes, I think that FERC not only has the opportunity  
24 here, but perhaps the responsibility to work with the gas  
25 industry to further public understanding of what are the

1 very real challenges facing our nation, but also the  
2 untapped viable misunderstood solutions to some of those  
3 challenges. That natural gas is a widely domestic fuel can  
4 provide.

5 I appreciate the Commission's continued  
6 non-partisan leadership on energy issues, as well as the  
7 opportunity to speak to you today.

8 Thank you.

9 MR. WRIGHT: Thank you, Mr. Brothwell.

10 Mr. Parker?

11 MR. PARKER: Sam, I don't know why your cat  
12 fell asleep, because that was engaging.

13 (Laughter.)

14 MR. PARKER: Mr. Chairman, Commissioners, I also  
15 appreciate the opportunity to speak to you today.

16 Increases in natural gas production have really  
17 driven the underlying pipeline infrastructure. Rocky  
18 Mountain shale plays and northeast Texas and Arkansas, LNG  
19 imports provide some of the most exciting import  
20 opportunities for increased gas production that we've seen  
21 in a long time. And you've seen infrastructure projects  
22 that have followed that.

23 At the same time, even with high priced gas, many  
24 of our existing basins are on the decline. The  
25 infrastructure that's been built and needs to be built is

1 focused on connecting these growing basins to the existing  
2 pipeline infrastructure that doesn't go to the right spot  
3 today. These pipelines are required. Basically, they move  
4 gas in my mind, from the west to the east and connect up to  
5 liquid points in the existing structure.

6           So, whether you are coming out of the Rockies,  
7 whether you're coming out of mid continent, whether you're  
8 coming out of the LNG, the whole point is to get that gas  
9 away from where it just can't get into the market to a point  
10 where it would be more liquid and get into the existing  
11 infrastructure. For that's important. We can't forget  
12 about existing infrastructure. It's the backbone of what we  
13 do. It provides the majority of the liquidity in the market  
14 place and moving gas around.

15           And to the markets it's connected today, we  
16 can't forget about that. It's exciting to work on new  
17 projects. I love it. The people who work for me want to  
18 work on the new projects. But the important thing is that  
19 we also have these great assets that they've been operating  
20 on all the time. And need the love and care and the  
21 benefits that come with it.

22           Finally, on the infrastructure side, storage is  
23 going to be increasingly important. It's really the low  
24 cost alternative to provide the demand, flexibility the  
25 market needs today. I commend the Commission on their

1 storage policy, statement that allow market based rates, or  
2 the opportunity for market based rates on storage. I  
3 believe the opportunity for market based rates will continue  
4 to impact storage to commit funds. And takes the downhole  
5 risk required to develop storage opportunities.

6 I want to point out that there is more risk in  
7 storage development than in the typical pipeline project.  
8 Unfortunately, the geology around the storage development  
9 project isn't always so perfectly clear as what six or eight  
10 foot below on a pipeline project. We only get approval from  
11 and work with a team of others to develop a pipeline  
12 project. We don't always get it done.

13 When we get approval and we work with the FERC  
14 team and others to develop a pipeline project, we know we  
15 can get it built. When we get approval on a storage  
16 project, we don't always know whether we're going to get it  
17 done. I have spent money on wells, and I've seen other  
18 companies put up 20, 30 million dollars to find out it isn't  
19 doable. So, there is significant risk in storage. More  
20 storage is going to b needed going forward, market based  
21 storage, fuel based storage in the future if those  
22 projections I saw on the screen.

23 That the storage is very inflexible. What seems  
24 a lot of our markets today. That's what's close to the  
25 market that can provide immediate punch.

1 Depleted fuels and salt storage is much more  
2 flexible. But, typically, those are more production given.

3 I'd like to remind you that large pipeline  
4 projects are complex. They're like a crossword puzzle  
5 where each piece needs to fit. They have to fit on  
6 schedule. The first piece needs to go in on time and it  
7 can't hold up the last piece.

8 For example, to mitigate cost increases and stay  
9 on a reasonable project schedule, infrastructure developers  
10 must commit all major materials, compression, pipe, valves,  
11 and so on, prior to filing even a certificate.

12 If you remember back in the past, it wasn't that  
13 many years ago, I would come into the Commission and I would  
14 seek a preliminary determination PD certificate and then I  
15 would commit to my materials. There's no way you can  
16 develop a project on a schedule that reaches consumer's  
17 needs today in the long lead times for pipe and compression  
18 and valves. You have to make those commitments up front to  
19 stay on your schedule.

20 Unlike some of our past projects, recent past  
21 projects, even, going forward construction contractors are  
22 unwilling to lock in costs for fear of risk in construction  
23 costs. And I don't blame them. Costs have gone up again  
24 the last couple of years. Construction rise 30 to 40  
25 percent. Cost of equipment and consumables, renting

1 equipment has risen dramatically.

2 As a real life example today, you saw -- that was  
3 a great presentation about REX, by the way -- the REX West  
4 project which has been approved by the Commission is under  
5 construction. That project is locked in with unit priced  
6 contracts, so the contractors are out there and their job is  
7 to be efficient. Which the REX company knows. Every piece  
8 of coil that's replaced costs "Y". It's not a fixed based  
9 contract, it's a cost plus contract to the company itself.

10 Additionally, construction windows in many parts  
11 of the country and limited construction resources, pipeline  
12 developers must reserve construction crews in guarantee of  
13 constructions to the contractor prior to receiving a  
14 certificate.

15 This is produce support. It hasn't happened  
16 before in the industry, but this is the way it is now.  
17 Before you even get a certificate, we have to  
18 tell contractors that you can start on this date. If you  
19 don't start on that date, we pay them like they did. That's  
20 a very tough decision for a pipeline company to make.  
21 That's why schedule is so important to pipeline companies  
22 when they come in to talk to you all. Because the limited  
23 resources in the industry, contractors have choices. And so  
24 the upper and limited windows for construction, so we need  
25 commitments on when they will start.

1 I ask the Commission to continue to work with  
2 infrastructure developers in all flexibility to develop a  
3 project, as far as futures concerned, so the project moves  
4 forward. Not all the answers are available, as you all  
5 know. One the applications are filed, concerns will come  
6 forward and need to be solved as the project is developed.

7 As you heard earlier today, a real life example,  
8 schedule on REX west. It's such an important project tat  
9 affects the market place like we post weekly at our current  
10 projects for the world to see. Talk to people who basically  
11 post it and then we'll discuss it.

12 Schedule is important across the whole project  
13 wherever you are building. Whether it's out at mid con in  
14 the Wahish or -- so, we ask the Commission to work with the  
15 participants to give the market place as clear a schedule  
16 implications as they can.

17 The Commission's done a great job with  
18 developers to provide a stable regulatory environment. So,  
19 I mention that, I would commend that. I talked about it for  
20 years when I was coming in to meet. It's so important that  
21 we try to attract capital and talk to our boards about  
22 investing in infrastructure that we look back on a stable  
23 environment that this Commission and the one before have  
24 provided. That's the way we were able to develop these  
25 projects and take these risks on.

1           Developing an investing infrastructure over a 30  
2 year plus economics. Not five years, not ten years, make  
3 that contract 30 years plus. So, that stable environment is  
4 important. It's important that the Commission continue to  
5 support project returns, improving the original project  
6 certificate. And as that projects moves forward over the  
7 next 30 or 40 years. And afterwards.

8           Additionally, because of rates, contract  
9 provisions -- should provider the customer support that is  
10 needed to develop these projects. And will continue to be  
11 important. I applaud the Commission for their support of  
12 those.

13           A stable regulatory environment and contracting  
14 flexibility will continue to be needed to encourage  
15 infrastructure investment. And there is more  
16 infrastructure investment needed. But out of the Rockies in  
17 2010, 2011, there will be needed infrastructure. Today,  
18 MLPs are pursuing much of the new infrastructure under  
19 development.

20           Sam mentioned that the MLP structure provides the  
21 developer a level of insurance that he can economically  
22 obtain the required capital and significant financial  
23 resources needed to develop these projects. These are also  
24 doing an excellent job operating much of the existing  
25 pipeline infrastructure. New Commissions should continue to

1 let our developers the flexibility to choose the corporate  
2 structure they need to develop and operate these pipelines  
3 and not in some way impact the viability of using the MLP  
4 structure. It hasn't happened to date and I applaud you  
5 again on that.

6           Finally, you had some questions about the labor  
7 forfitch(sic). I would say the labor forfitch is not just  
8 limited to the pipeline industry. It's the production  
9 industry, the intrastate, the intrastate pipelines, LDCs,  
10 our customers and the service contractors that provide that  
11 work for them.

12           The industry needs to continue to pursue  
13 development of skilled labor and attract new people into  
14 this industry. Training has increased on construction  
15 projects to help bring employees with limited experience up  
16 to insure safety and compliance.

17           As a real life example of that, on the REX West  
18 project, the contractors there put a piece of green tape  
19 around the guy who doesn't have the experience so that when  
20 contractors are working and an experienced guy can look  
21 across and say I'm working with a guy who isn't experienced  
22 and I need to mentor him, or at least need to make sure he  
23 knows what he's doing right now so we can move forward.

24           For whatever work we encountered here, we hadn't  
25 done that in the past. We hope that the training we're

1 providing and that type of interaction can go next year on  
2 our other projects. And those people could help mentor  
3 others. We've trained almost 6,000 people. We hope these  
4 new employees, again, will help train others in the future.

5 Finally, I would just say, you know, I  
6 appreciate the opportunity to speak here and answer any  
7 questions.

8 MR. WRIGHT: Thank you, Mr. Parker.

9 Ms. Wyrsh.

10 MS. WYRSCH: Mr. Chairman, Commissioner, thank  
11 you for having me here today.

12 Two years ago, I spoke at the Commission's  
13 October 12th, 2005 retro gas industry conference. That  
14 conference was held in the immediate aftermath of two  
15 hurricanes in the Gulf of Mexico, and we discussed the  
16 ability of this industry to repair the damage to pipeline  
17 infrastructure. That can have sufficient gas delivery  
18 ability to meet the upcoming winter needs.

19 Together with the help of warm weather, we met  
20 that challenge. Today, rather repairing hurricane damage,  
21 the industry is hoping on 4xpanding and strengthening the  
22 nation's natural gas infrastructure. We need to meet the  
23 needs and the challenges that both produces and the markets  
24 are facing.

25 In this pipeline and storage projects are in

1 various stages of being proposed and constructed to connect  
2 to natural gas supply to go into these markets to connect  
3 the LNG terminals to provide the flexibility and reliability  
4 that storage brings.

5 Tens of billions of dollars are being invested in  
6 both the existing and new pipelines in storage projects.  
7 Although the industry today is increasingly competitive, the  
8 pipeline and storage industry has been able to attract the  
9 billions of dollars needed for investment. This is largely  
10 due to the supportive and stable regulatory policies of this  
11 Commission.

12 FERC is doing a good job in its role as the  
13 leader in developing our nation's pipeline infrastructure.  
14 While project developers may wish at times for different  
15 answers, the certificate staff is clear, credible and  
16 focused on balancing speed with careful review.

17 Infrastructure projects are in two phases. The  
18 agreement with customers that are sufficient to make the  
19 project economically feasible. Obtain all of the necessary  
20 regulatory approvals. And, finally, constructing and  
21 completing the facilities on budget and in time to meet the  
22 market needs.

23 Addressing each of these phases, I will start  
24 with customer contacts.

25 The Commission's policies play a critical long

1 term role in shaping price signals that encourage customers  
2 to sign up for long term firm capacity new pipelines.  
3 Rigid application of traditional regulatory theories can  
4 hinder the development of new infrastructure.

5 I commend the Commission for its willingness to  
6 ask what it can do to align its policies with current  
7 market realities, to encourage continued development of  
8 natural gas infrastructure.

9 For instance, the Commission modified its  
10 regulatory policy with respect to LNG import facilities.  
11 Which has resulted in numerous LNG regas projects being  
12 proposed and constructed.

13 The Commission's policy with respect to market  
14 based pricing for storage facilities has also created an  
15 environment more conducive to development of new storage  
16 projects.

17 One area of opportunity for the FERC is pipeline  
18 rate regulation. While negotiated rates have helped  
19 pipelines in developing new infrastructure, I believe  
20 additional benefits can be achieved if the Commission asks  
21 on proposals that rely on market forces to set rates for  
22 pipelines.

23 An important first step would be to list the  
24 price cap on the secondary market for possible release on  
25 short term firmment in direct to transportation. Listing the

1 price cap would increase real time transparency regarding  
2 the value of capacity for both shippers and pipelines.

3           Some of the loss was used by the Commission when  
4 it lifted the price cap on the secondary market for electric  
5 transmission. We respect to the regulatory approval  
6 process, the pipeline industry faces significant challenges  
7 in citing infrastructure. And you've heard a lot about that  
8 this morning.

9           While a pipeline is a beautiful thing to  
10 pipeliners, it is not true for everyone. NIMBY and NIMS are  
11 acronyms known to most developers, but it is too easy to use  
12 these labels to dismiss the real concerns of land owners.

13           We support FERC policies such as pre-filing, which  
14 make the certificate process more transparent to land  
15 owners, to environmental agencies and to other stakeholders.  
16 As part of Spectra's development practices we engage in  
17 ongoing respectful and responsive communication with all  
18 stakeholders. We reach out very early, long before filing a  
19 certificate. And we work with our stakeholders, also  
20 meeting with citizens in townhalls, with local administrators  
21 and working with environmental advocacy groups, partnering  
22 throughout the process.

23           We maintain a land owner complaint hotline  
24 system and updated project website at all times. And we  
25 conduct lessons learned to get feedback from all parties so

1 that we can improve our approach. We are constantly looking  
2 for ways to strengthen our outreach, recognizing that as the  
3 public's appetite for information and the process continues  
4 to grow, we must also adapt.

5           New built pipes to last for many generations and  
6 we know that our land owner relationships are key to our  
7 success. To get the results, must have an opportunity to  
8 participate in the process. So, I urge the Commission to  
9 continue to encourage collaboration and communication among  
10 all stakeholders.

11           As we truthfully address land owner concerns, we  
12 must remember in critical ways, have a significant cost  
13 impact on projects resulting in added costs for the  
14 customer. And for the pipeline. Moving quickly to dissolve  
15 disputes is critical.

16           Finally, let me address some of the risks and  
17 challenges of the last phase of infrastructure development.  
18 Construction.

19           Today's construction market is extremely tight  
20 from a project developer's perspective. The cost of pipe,  
21 valves, fittings and other parts, has risen by over 20  
22 percent in the last three years. The availability of pipe  
23 and compressors, we are placing orders far earlier than we  
24 have in the past. And certainly prior to obtaining  
25 regulatory approvals.

1           In 2005, we could order pipe approximately six  
2 months before the desired delivery date. In 2007, the lead  
3 time is 12 months. For compression, in 2005, delivery time  
4 was 12 months. To 14 months in 2007.

5           Let me give you a concrete example using the  
6 Southeast Supply Header Project, which you approved in  
7 September.

8           The partners in this project, Spectra and  
9 Centerpoint, made a financial commitment to a space for 16  
10 months prior to issue of certificate. We placed an order  
11 for 275 miles of 42 inch and 36 inch pipe 13 months prior to  
12 the issuance of the certificate. The pipe was manufactured  
13 in Greece, but we started taking possession three months  
14 before we received the shipping schedule.

15           Our experience is not unique. Project sponsors  
16 are managing significant risks in bringing new projects  
17 online and must be assured of stable financial returns  
18 commensurate with this risk level.

19           The skilled labor shortage does in fact impact  
20 infrastructure development as well. The challenges secured  
21 workers are hard to get in and in short supply. Pipeline  
22 contractors are also experiencing a legal shortage. It's  
23 hard to get their services have resulted in labor  
24 construction cost increases ranging from 30 to 35 percent  
25 over the past three years, due, in part, to low report

1 activity of the new workers. That's fact talked about.

2 Mainline pipeline contractors are almost totally  
3 booked for 2008 and are selling contracts now for 2009 and  
4 2010. Any challenges we see opportunities. I believe our  
5 industry, together with FERC and other energy stakeholders  
6 can do more if we push for it. That we have secured workers  
7 who are excited about careers in the energy industry.

8 Our focused efforts to attract, to train and  
9 retain technically skilled workers is the focus of the  
10 Center for Energy Workforce Development. We are proud to be  
11 a part of that collaborative effort with others in the  
12 energy industry.

13 Thank you. I'll stop and we'll open up to  
14 questions after Brad.

15 MR. WRIGHT: Thank you, Ms. Wyrsh.

16 Mr. Kamph.

17 MR. KAMPH: Thank you for the opportunity to  
18 present some ideas to you. Martha has just mentioned, I  
19 think she answered the questions from the pipeline  
20 perspective, but it is a critical issue with the skills. I  
21 think what I can do is provide a little bit of information  
22 around why that's critical and what some of the impacts are.

23 To start with, one of the things that we found is  
24 things in the workforce that seem to be missing.

25 One of the things we focused on working through

1 INGAA, the INGAA Foundation and some of the other  
2 associations and groups which is really to tie the business  
3 case together with this, we found some very interesting  
4 things.

5           The overall business case that we found just  
6 relative to the interstate natural gas industry is about 575  
7 million dollars a year is the cost of attrition in the  
8 industry. That's based on the number of people that are  
9 actually churning in the industry, but it's also looking at  
10 the difference between just aging work force as well as  
11 overall attrition. What we found was very interesting was  
12 everybody's heard about the aging work force for so many  
13 years. The majority of the costs that are hitting the  
14 organizations are not coming from the aging workforce alone.

15           That is really only representing about 15  
16 percent of the total cost. What we're seeing is the actual  
17 organizations that are just having overall turnover. We  
18 use the term cannibalism every once in a while, but it is  
19 just picking up people from other organizations. Turning is  
20 becoming a very big impact on the industry.

21           And this is again just the natural gas industry.  
22 As soon as you take this outside to the electric industry  
23 and oil and gas and the rest of the groups, the numbers get  
24 much, much larger. For this industry, that's expected to  
25 grow over time to about 780 million dollars a year.

1           That cost to our organization is definitely  
2 increasing.

3           Now, a few of the things that we are finding,  
4 part of the work we've recently been pulling together is  
5 really an understanding, an in-depth understanding of the  
6 organizations. We've gotten a lot of participation from  
7 many of the pipe companies, as well as the service  
8 companies. So, we've gotten some interesting features to  
9 share.

10           What we're finding is that most of the managers  
11 that we're talking to, most of the mid-level managers in the  
12 organization are feeling that if it's going to have an  
13 impact, have a major impact on their business operations in  
14 the next two years. They assume that this is coming up to  
15 bear very quickly.

16           We are seeing a pretty large disconnect between  
17 the executives and management of the organization. I think  
18 the result of that isn't necessarily from negligence.  
19 Organizations have gotten so lean, and there's such a  
20 priority on making sure that the projects are being  
21 accomplished and all the other dynamics of their business,  
22 that they leaned so much over time that they are just not  
23 having the kind of focus on it. They count on management to  
24 carry a lot of the work force initiatives forward.

25           That's basically a conflict that's happening

1 because they have the day to day priorities to carry out.  
2 So we're saying that's one of the main things that's  
3 happening. Within the industries themselves. The  
4 associations and other groups, we're seeing quite a  
5 piecemeal approach on how companies are also taking care of  
6 this initiative.

7           Very few companies, on the whole, there is a  
8 workforce supply chain concept where they have supply,  
9 recruitment, development and retention overall. As well as  
10 the knowledge management component tied to it.

11           What we're seeing is they're working on a piece  
12 of it. They need to work on recruitment, we have to recruit  
13 they have major issues that are going on with turnover.  
14 Retention is really where their big problem is. What we're  
15 seeing is that's something within most of the companies.  
16 The same thing that is happening in most of the industry  
17 associations that are out there.

18           The Center for Energy Work Force Development,  
19 sponsored by EEI and other groups, I know you guys are  
20 familiar with that. The majority of what they're focused  
21 on is supply issues. They're focusing most of their efforts  
22 on supplies. Their programs don't necessarily cover all the  
23 other aspects of it.

24           Most of the other associations put out pieces of  
25 different things to try to help companies, and it's kind of

1 perpetuating a little bit of a scattered approach towards  
2 that. So, it's a new trend now that we're seeing where  
3 companies are really taking part a little bit more now.  
4 It's a little bit more of a business case associated with  
5 it. All the dynamics. Try to tie that together.

6 I think I mentioned earlier the aging workforce  
7 is to some degree, a little bit of a red herring. Everybody  
8 has been crying wolf about that for the past five years.  
9 And everybody's still operating. That is one of the  
10 surprising things that we found.

11 Once again, the majority of what we're seeing,  
12 the costs to the companies and the delays and the problems  
13 and the lower productivity is resulting in the employees  
14 that have two to ten years of tenure. That's the turnover  
15 that's really impacting the organizations in a major way.

16 Relative to that, 87 percent of all the  
17 companies that we talked to didn't even have a goal for non-  
18 retirement attrition. They're not even necessarily  
19 focusing on that because it wasn't brought to bear.

20 The cost, by the way, we were able to benchmark  
21 the cost of recruiting between companies. And just to get a  
22 company to recruiting in the industry is costing about 165  
23 million a year. Just the cost to companies for employees.  
24 Maybe within the pipeline industry.

25 The recruiting requirements, the next slide is a

1 little bit just the requirements they're showing. We  
2 actually have a requirement in the industry to recruit about  
3 9000 people a year. About 8500 to 9000 new people a year  
4 need to commit. It's broken down from just basically new  
5 hires for the replacements in the industry.

6 The second line on the chart is indicative of  
7 just the requirements based on the growth of the industry  
8 and the new projects,

9 The top line on the chart is indicative of the  
10 amount of additional recusal. That would need to be in  
11 place if companies were hiring if there wasn't so much  
12 cannibalism, basically, going on within the industry.  
13 That's the mutual requirement and that, obviously, just  
14 keeps growing over time.

15 A little bit of the perspective, this is just  
16 kind of demonstrating the point a little bit earlier. The  
17 chart on the left, which is the executive viewpoint for  
18 assistant managers you point on the right hand side. One of  
19 the key questions that we asked was do you feel your  
20 company's going to successfully maintain its work force and  
21 knowledge management assets?

22 The interesting point we found on this was that  
23 the executives had a very high level of confidence, overall.

24 The respective management viewpoints on that, you  
25 can see the level of confidence from the management

1 perspective was much lower. That's really where I think a  
2 lot of challenge that the companies are going to be facing  
3 is really trying -- it's almost unleaning some of these  
4 aspects, as companies have major hiring requirements that  
5 are going on. They have to build up a little bit of their  
6 infrastructure to be able to do that.

7           That adds cost, yet that's offset by higher  
8 productivity. Once the employees get in there, there is  
9 investment they're going to have to make, and there are some  
10 real challenges to basically keep up with how the industry  
11 needs to run and keep growing.

12           The last chart that I have, I was just going to  
13 show a few bars with the divergence between the pipeline and  
14 service companies. We're seeing different dynamics between  
15 those two. The service companies have much higher levels of  
16 challenges because of the timing of their work a lot of the  
17 time. Some service companies fluctuate three to four  
18 thousand in work force, depending upon the seasonality of  
19 things.

20           But if you add a little bit more focus around the  
21 requirements, all the other work was assets. The pipeline  
22 companies didn't have that same perspective on it. Again,  
23 this is not necessarily because it wasn't important to them.  
24 They're major priorities. But it all did rise up to a  
25 major priority. It's a timing issue, and it is a matter as

1 to how much is being lean and then it's also being able to  
2 get a look at the business cases associated with all of it.

3 We've seen a lot of good movement on it, but  
4 there's critical aspects, especially when you extend it out  
5 of the natural gas industry to the overall process  
6 industries, because they become to some degree -- in the  
7 electric industry, the comparison is the municipalities are  
8 a feeding ground for the IOUs. They have a lower rate  
9 structure or they have a lower pay structure or a salary  
10 structure. They are targets for recruitment for the IOUs.

11 The gas industry is the same. Some of the other  
12 industries, what are they doing? Production and things  
13 along that line. What overseas work along that line. They  
14 have more of an impact, they can offer higher salaries, they  
15 can offer higher levels of bonus to try to keep the people  
16 in the same respect.

17 So, each group has a different level of  
18 challenges. And it is -- there's some good movement moving  
19 towards actually solving that. It's definitely at a point  
20 where it needs to be really looked at by everyone.

21 That completes my remarks.

22 CHAIRMAN KELLIHER: Thanks very much.

23 Why don't we go with six minute rounds of  
24 questions.

25 Lynn, do you have any questions? No? Seven

1 minutes now.

2 Why don't we start with Commissioner Moeller.

3 COMMISSIONER MOELLER: Thanks, Mr. Chairman.

4 Brad, thank you for that last rundown. I might  
5 want -- I grew up on a ranch in Washington state where I was  
6 taught not just caulking, too, but welding. So, I have an  
7 appreciation for secured labor. Also, a disappointment with  
8 education policy makers, I guess, who de-emphasized  
9 vocational education over the last couple of decades. We're  
10 paying the price for it now.

11 I commend the INGAA Foundation for commissioning  
12 this study. I'm not quite sure what our next steps are.  
13 Would you recommend them?

14 MR. KAMPH: The next steps for the INGAA study?

15 COMMISSIONER MOELLER: Just your recommendations  
16 on dealing with this workforce challenge that applies not  
17 only to this industry, but as you've said, the electric  
18 industry. Basically, anyone who's building anything in  
19 this country.

20 MR. KAMPH: Some good next steps -- making sure  
21 the understanding is out there is probably one of the  
22 biggest things, even within the INGAA Foundation, and  
23 expanding right out.

24 Really getting the understanding out there is one  
25 of the biggest issues we're run into. The educational

1 system and the work at the Center for Energy Work Force  
2 Development and the Midwest Energy Association and the rest  
3 of the 43 groups that are out there. Whenever they're  
4 dealing with supply, those are all have great concepts.

5 But no matter how they look at it, those are  
6 five to ten year solutions. It's taking a much higher  
7 range of time to get that level of supply out, especially,  
8 when they're reaching down to the junior high school levels.  
9 That's the level that they're going to.

10 Those are very viable to do. But some shorter  
11 term issues, some shorter PR types of things and promotion.  
12 It's not really well known the upper value of the property  
13 in the industry.

14 For example, you talked about it earlier. The  
15 lineman is making 70, 80, 90 dollars an hour now. The  
16 smallest they can make and get to that are extremely.  
17 Helpers are getting creative and doing things like  
18 scholarships and training. But to be able to get the  
19 outreach and to identifying what those groups are, the  
20 buildup to sourcing is very important. And many companies  
21 overall, from a recommendations standpoint, need to take a  
22 little more holistic approach towards really kind of looking  
23 at their work force architecture.

24 Fifty percent of employees are leaving due to  
25 compensation alone. That leaves the other 50 percent

1 opportunities. The opportunities are ranging. And the  
2 reasons they are leaving are ranging from career advancement  
3 opportunities. Twenty percent of people are leaving just  
4 based on boredom.

5 So, there's challenge in working, things along  
6 that line, so companies have having an opportunity, and I  
7 show the 575 million dollar business case. That's not to  
8 say that is all the trouble. What the 80 percent that you  
9 have definitely is recoverable by focusing on some of the  
10 core business practices. They are addressing.

11 So, some of the solutions are industry driven and  
12 some of them are company driven. Between the two of those,  
13 they should be able to close the gap over time.

14 COMMISSIONER MOELLER: Thank you. Add my voice  
15 to those who express concern and support for policies that  
16 will help turn this around. But as you know, it will take  
17 some time.

18 For now, I think that's all I'm going to ask.  
19 Thanks.

20 CHAIRMAN KELLIHER: Commissioner Kelly.

21 COMMISSIONER KELLY: I've got to say I really  
22 like the green tape idea.

23 (Laughter.)

24 COMMISSIONER KELLY: I think it could have  
25 served me in good stead coming up the ropes.

1           Sam, I wanted to ask you to elaborate a little  
2 bit more on the remark you made about the misperception of  
3 natural gas. Would you mind repeating that? If there's any  
4 lessons to be learned or morals about what you see in the  
5 market place for us as regulators.

6           MR. BROTHWELL: Certainly. The thing that got me  
7 thinking about that was you may have seen the Manhattan  
8 Institute's study that conducted a poll of people on energy  
9 issues, where most of our energy comes from and things of  
10 that nature.

11           They pointed out a lot of things that I think  
12 people assembled in this room would know are not really  
13 true. But perception often lines up being reality,  
14 particularly in the political realm. Going to think  
15 somebody misperceptions and I joked about trying to read my  
16 speech to my daughter. I think kids that age maybe  
17 understand the real, the very serious charges which they're  
18 seeing on the energy front in this country.

19           I think there's a misunderstanding out there  
20 amongst the public, and that translates, unfortunately,  
21 into legislative policy.

22           We have tremendous amounts of natural gas  
23 available in this country. A lot of it's off limits because  
24 of legislative restrictions. I think that's one of the many  
25 things that we need to address.

1           COMMISSIONER KELLY: Thank you.

2           Brad, have contracting firms arisen to respond to  
3 this demand? It seems to me there is concern about shortage  
4 of labor, shortage of work force within the companies that  
5 maybe their contracting firms would have a reason to provide  
6 that labor.

7           MR. KAMPH: There are firms that are doing that,  
8 but the bottom line is there's just a shortage of qualified  
9 people to do it. So, it's not necessarily, there's  
10 definitely people going through agencies and they're doing a  
11 lot of things to try to do that and they're using  
12 contractors. But if you need 10,000 workers and there's  
13 only 5,000 that exist, you hit a certain market at a certain  
14 time, that's not solving it.

15           At the same time, the union membership is going  
16 down. Even so at the union halls with returning mayhem and  
17 bas it along that line, that's been a little bit more  
18 difficult to do over the last two years. It's not quite  
19 solving it.

20           COMMISSIONER KELLY: Stock and markers is  
21 usually more about the work force study. What lessons do  
22 you take from that?

23           MS. WYRSCH: I have to say, first, that people  
24 like Scott and I will probably be chastised by the alliance  
25 study that said executives didn't have this type of mind.

1           For those of us who studied tht INGAA Foundation,  
2 there's a real eye opener. In fact I think we are quite  
3 lean as an industry. Cost management is key to our success  
4 as businesses, yet we can't lose sight of the longer term  
5 views. As property, you know, we need to step back and  
6 think about our long term practices. Supply is a big piece  
7 of it. In northern Canada, I'll just give you an example.

8           We have a very hard time getting skilled  
9 technical people up to northern Canada who really want to  
10 work in Port St. John. So, what we've done is develop  
11 programs in the high schools there to appeal to young people  
12 who grew up there, know what's like and want to stay in  
13 those communities and give them viable reasons to be there.  
14 Give them opportunities to obtain all of the certificates  
15 like the welder's certificat4e while they're going through  
16 their high school years. It's been a way for us to attract  
17 and retain new talent.

18           But you're right about those people who are  
19 turning and moving in and out of the industry. We have not  
20 yet been able to get our arms around that one. We do see  
21 turnover. We do, in fact, have targets that turnover inside  
22 our company. But I suspect Kinder Morgan does as well. But  
23 the test may be when you see people attracted to cities like  
24 Houston for other higher paying positions.

25           MR. PARKER: I'm not surprised that some

1 executives were confident. They always seemed really too  
2 confident to me.

3 The managers are where the rubber meets the  
4 road. The people are getting bummed, so it doesn't  
5 surprise me either that they'd be concerned about the work  
6 force. We've seen higher turnover.

7 I was talking to Martha earlier today. One of  
8 the things we've done and they've done is try to address  
9 just one spot. One example is inspection of pipelines. You  
10 know, you have to have somebody out there that's doing  
11 inspections. And then you have to hire people to operate  
12 these new assets as you build them.

13 We have both stepped back and said let's hire  
14 these people, train as best we can to our organizations and  
15 then have them do the inspection on new projects. So have  
16 them work right on that same asset. So they develop that  
17 ownership. They wanted to be in the company and that  
18 ownership can hopefully will turn out to be long term  
19 employees who have great benefits plans severance, things  
20 like that.

21 So, we're trying the best we can. It's a  
22 difficult embassy because there is a great need out there.

23 MS. WYRSCH: One other thing I might add. We  
24 find employees are very much interested in things beyond  
25 pay. They care a lot of whether your company cares about

1 the environment. Whether your company is involved in the  
2 communities in which they are living and working. Whether  
3 or not they allow employees to speak their minds freely and  
4 be open and not fear retaliation.

5 That's a culture change that has to take hold.  
6 And be built upon a foundation of sustainable companies.  
7 That's something that we very much focused on for the longer  
8 term, that we are at a place where people want to say I'm  
9 proud to work in the industry.

10 You know, Suedeen, you and I have had this  
11 conversation about how do we make this a more appealing  
12 industry. It's not terribly sexy to say that you're in the  
13 natural gas business. In fact, many think that it's a  
14 dirty business, according to what Sam had to say.

15 I think as an industry, we owe ourselves to get  
16 the story out there that we are, in fact, very cool, we care  
17 about the environment. We want to build communities for the  
18 long term.

19 COMMISSIONER KELLY: I agree with you, Martha. I  
20 have to say, Sam, that I have put my daughters to sleep  
21 numerous times.

22 Thank you very much.

23 CHAIRMAN KELLIHER: Commissioner Moeller.

24 COMMISSIONER MOELLER: Thank you, Mr. Chairman.

25 Sam, I'd like to ask you a little bit more about

1 the MLP issue. You said you liked our policy statement,  
2 other than you don't like the capping. Do you have any  
3 other observations in terms of how we go forward relative to  
4 the different risks in the MLP model, which clearly is the  
5 one that is overtaking the standard sequel?

6 MR. BROTHWELL: Let me start by suggesting that  
7 perhaps going into some of the technical details, I'd be  
8 happy to follow-up with Commissioner and staff on that  
9 issue. In a broad sense, I'd say simplicity is good.

10 Any time you add levels of complexity, we have  
11 some investors that I talk to who are very conversant and  
12 have followed this industry for years. However, as we're  
13 reaching further and further to capture the capital that  
14 will be needed to meet these challenges, we're having to  
15 address an audience that's less well versed in these types  
16 of technical issues. Particularly, regulation. It just  
17 scares a lot of folks off.

18 The more straightforward we can make it. It's  
19 pretty easy to understand basic cash yield on an  
20 investment. This is how the securities is placed in the  
21 market. That's a very simple concept for most investors to  
22 grasp.

23 When you get into depreciation, capping reported  
24 earnings, difference between reported earnings and the  
25 distributable cash flow from MLP, it simply takes a little

1 wile to come up to curve on. I know I only have a CPA's  
2 certificate, but it's about 25 years old. It took me a  
3 little while.

4 So, simplicity, I think, is something that  
5 should be a key objective.

6 COMMISSIONER MOELLER: When you do your analysis  
7 of those investments, to what extent do you assign risk to  
8 the potential MLPs getting caught up in legislation related  
9 to hedge funds? And, also, legislation pertaining to tax  
10 rates that are subject to change after 2010 related to  
11 dividends? And, also, various income levels.

12 MR. BROTHWELL: Well, you see, let me say that I  
13 have two colleagues who cover the MLP-focused companies.  
14 With that said, those are both very key issues that are on  
15 the minds of investors that look at this sector. The MLP  
16 structure, as I said, has been embraced by investors as a  
17 variance for efficient vehicle and something that has served  
18 the industry well.

19 But those types of legislative, upper potential  
20 legislative changes, if those expect to escalate, that could  
21 certainly send a very negative signal. And I don't think  
22 that's what we want to have happen at this point.

23 COMMISSIONER MOELLER: Perhaps we can talk to  
24 your two folks to focus on this.

25 Thank you very much. Thank you, Mr. Chairman.

1           CHAIRMAN KELLIHER: I have a couple of questions  
2 for you. Some of my questions have been covered by my  
3 colleagues. But first of all, I want to thank you for the  
4 Commission as an institution, for your comments about our  
5 efficiency and our infrastructure role. It was our oldest  
6 role and for 15 years, it was our only -- from 1928 to 1935,  
7 when it was the Federal Water Public Commission, that was  
8 our only job -- to license water power projects.

9           Infrastructure is in our FERC DNA. It's  
10 something the Commission is very good at. So, I appreciate  
11 your comments.

12           We've had a good record of making efficient  
13 decisions with pipeline projects. But we can only do that  
14 when we get very high quality applications coming in the  
15 door. That is the rule. As a general matter. It's not  
16 universal, but it is a general rule.

17           If we get applications in, we'll be able to act  
18 in a timely manner and meet pretty aggressive schedules. I  
19 do agree with Sam that there is a perception problem with  
20 the public. I think sometimes when the public sees the oil  
21 and gas sector, they see James Dean from Giant. That's the  
22 oil and gas industry. We don't see there's a high tech  
23 industry. Keeping the gas industry is like that. Which is  
24 puzzling. And that's something we have to deal with. It's  
25 difficult sometimes with certain projects.

1           There are a lot of questions the oil and gas  
2 activity. I just had a couple of questions.

3           One was in terms of infrastructure, what do you  
4 think's been the biggest development that's driving recent  
5 infrastructure projects? Is it the Rockies production?  
6 That seems to be a driver for certain projects. Is it  
7 Barnett, is it LNG imports? Is it the decline in Canadian  
8 imports? Is it really hard to choose which one is the  
9 biggest character?

10           MR. PARKER: I think it is production that's  
11 driving it. And I think Rockies is your focus on because  
12 it's one of the largest production potentials and it's there  
13 and it's happening. But Texas and Arkansas are a little  
14 earlier in the stage, but they're just as significant, I  
15 believe. And LNG can be significant, too.

16           It's really the producers and the supply driving  
17 this infrastructure development outside of storage, which I  
18 think is more market demand for them.

19           Thanks.

20           CHAIRMAN KELLIHER: Martha?

21           MS. WYRSCH: Well, I was just going to mention  
22 storage, but Scott did. I do think storage is very much LNG  
23 driven, particularly down on the Gulf. What you heard from  
24 the LNG panelists is spot on with what we're seeing.

25           CHAIRMAN KELLIHER: Thanks.

1 Sam, did you have a comment?

2 MR. BROTHWELL: No.

3 CHAIRMAN KELLIHER: LNG is driving storage in  
4 part because other NLG importing countries don't really have  
5 storage capacity and we have, just a geologic perspective,  
6 not because it's undeveloped. The potential doesn't really  
7 exist. Which I'm not an expert on what international  
8 storage looks like, but I do know that capacity in the  
9 United States and our ability to expand what's currently  
10 available, is enormous.

11 So, we are capable of being that summertime  
12 delivery point. When there isn't price point that sends LNG  
13 to other parts of the world. That's a real advantage for  
14 us.

15 We saw it over the summer months, we saw it on  
16 slides in an earlier presentation.

17 MS. BROTHWELL: I would just add to that, that  
18 piece up there with the use of electricity tees up right  
19 along with the biggest most air conditioned country in the  
20 world. So that's probably not going to change any time  
21 soon, so thee is a natural seasonal arbitrage that comes  
22 into play.

23 MR. PARKER: I guess I would just say that we  
24 seem to have gotten used to the volatility. Years ago, we  
25 would have been shocked at the volatility of gas prices on a

1 daily and a monthly basis.

2 As an example, we just had our storage open  
3 season. We had a buying open season where if you turn it  
4 in, you committed. We got outstanding demand, much higher  
5 than the capability of our open season. That just tells you  
6 the volatility besides the future of LNG, the volatility to  
7 the driving storage development.

8 CHAIRMAN KELLIHER: Question on the competition  
9 for skilled labor. Your competition for that labor, is it  
10 other pipeline projects? Is it construction outside of the  
11 pipeline sector? Is it construction in China? What's the  
12 nature of the competition for skilled labor? Is it just  
13 pipeline sector? Within the pipeline sector? Or does it go  
14 beyond that?

15 MS. WYRSCH: Certainly, within the pipeline  
16 sector, we've seen a lot of competition with all of these  
17 projects that are being developed right now. We also saw  
18 real competition for labor. And as we continue to work to  
19 clean up the aftermaths of the hurricanes, folks who would  
20 otherwise have been deployed to work on a pipeline project,  
21 were very much employed already and not having to travel  
22 around, frankly. So they were just as happy to stay down in  
23 the Gulf area and do that clean up work. Most of that has  
24 gotten completed, but what we're seeing is there's some  
25 infrastructure development in almost every sector.

1           As a consequence, folks have choices. We're  
2 finding one of the ways that we maintain the relationships  
3 is that over time, we spend about half a billion dollars a  
4 year on maintenance capital as well. We need to ensure that  
5 we've got good workers to support us there.

6           The longer term relationships, we have longer  
7 term contracts with those folks that have allowed us, then,  
8 to translate that into also contractors who will work on our  
9 projects knowing that there is a long term relationship for  
10 them over time.

11           But the competition is fierce.

12           MR. PARKER: I'd add two things to that. One,  
13 you have to remember the pipeline companies, both interstate  
14 and intrastate, and overseas, are spending significant  
15 amounts of money on integrity today. They've been doing it  
16 the last few years, they'll continue to ramp it up from  
17 2007 to 2011. Some state regulations require even quicker.

18           That's taking resources, committed resources.  
19 There's only so much our resources can do.

20           On the other hand, it's also not just people,  
21 it's equipment. You can't build a 42 inch pipeline unless  
22 you have the equipment to do it. We've had to bring  
23 equipment in from foreign countries to actually make sure we  
24 could meet our construction schedule. So, there's  
25 limitations in everything we do. Not just people, but in

1 equipment, the underlying fundamental equipment.

2 MR. KAMPH: Quick comment on that. What we're  
3 seeing is about two-thirds of the people that are leaving  
4 are going to other industries. As employees are leaving  
5 their jobs, we're seeing about one-third of them are staying  
6 within the industry, but two-thirds are actually going  
7 external to a pipeline industry.

8 CHAIRMAN KELLIHER: But they're not moving into  
9 their skilled -- they're not moving if they're a welder  
10 outside of the pipeline sector?

11 MR. KAMPH: Yes, because you can take a welder,  
12 they can go in the utility industry just as easy as he can  
13 anywhere else. So, we're seeing a lot of that movement.  
14 Even on the drilling side, you know. If you start taking an  
15 external to that, you will find there's nobody else needs  
16 welders also. It translates out to about two-thirds of the  
17 people are actually weaning out of the industry. One-third  
18 is staying within the industry.

19 CHAIRMAN KELLIHER: You talk about perceptions.  
20 Sometimes, there's still perception the pipeline industry is  
21 the same as it was 30 years ago when it was insulated from  
22 risk and you had long term contracts.

23 I'm just curious, what is the average length of  
24 contracts on Spectra?

25 MS. WYRSCH: It depends on which pipeline. Our

1 average is about eight and a half to nine years, overall.  
2 Longer term on pipelines like Gulfstream which have long  
3 term contracts underpinning the news infrastructure. But  
4 we're seeing shorter and shorter terms.

5 We would not contract, though, for a new  
6 pipeline to be built for anything less than ten years, Some  
7 colleagues in the industry are willing to do that, but that  
8 risk would be far too high for us as a company.

9 MR. PARKER: Our mature assets, the contract  
10 average length term is three years. So, every year we have  
11 about 33 percent of our contracts come up.

12 CHAIRMAN KELLIHER: That's great. I was just  
13 going to make some closing remarks and turn to my  
14 colleagues. But I think to try to recap what we've heard, I  
15 think I've heard, that the state of U.S. gas industry is  
16 sound. Also FERC gas regulation is sound. From this panel,  
17 certainly.

18 I think we've seen very impressive efforts by the  
19 producers to maintain domestic gas production at high  
20 levels. And we've had some great success there. But we've  
21 seen continued strong demands and the economy needs natural  
22 gas supplies. We've seen viability in terms of climate  
23 change policy and what that might mean for even greater  
24 requirements for natural gas.

25 We have a very robust gas infrastructure in the

1 United States, and we've seen really rapid response to the  
2 production changes by the companies who are on this panel,  
3 as well as others. And we feel a really dominant and I'm  
4 not sure sufficiently recognized role for LNG going forward  
5 as the fastest growing source of U.S. natural gas supply.

6 We've talked about some of the implications for  
7 that for the United States. But we can probably can guess  
8 at some of the implications of others we won't quite know  
9 until they're upon us. And FERC, as Commissioner Moeller  
10 indicated, will sometimes perceived as electricity all the  
11 time. All electricity all the time.

12 But we are a natural gas agency and we are  
13 spending a great deal of time on natural gas  
14 issues. And we're all looking for regulatory reform and  
15 Phil went through some of the issues that we're looking at  
16 right now. So, I think we are going to continue to pursue  
17 regulatory reform.

18 FERC regulation is sound. We're always going to  
19 look for improvements. We're not looking at revolution  
20 because there's probably not a need for revolution in FERC  
21 U.S. policy. So, we'll continue to pursue the forms and  
22 strengthen our policy over time.

23 And that's about all I have to say.

24 Let me turn to my colleagues. Any closing  
25 remarks?

1           COMMISSIONER KELLY: I liked your idea of some of  
2 the takeaways. So if I look at my notes on the takeaways,  
3 for me, are, competition is alive and well in the natural  
4 gas industry in the United States. We're not talking about  
5 how to make competition evolve or how it will evolve. We're  
6 really talking about how markets, competitive markets are  
7 going to evolve.

8           Demand appears to be driving the market today in  
9 natural gas. It looks as if we will continue to see higher  
10 prices in the gas with continued volatility. LNG is going  
11 to be on all our lips for a long time. It appears that  
12 we're not quite as high as the rest of the world in the  
13 regas infrastructure, as Patricia discussed, although we're  
14 getting there in having regas permitted to handle our  
15 demand.

16           Gas infrastructure is going to continue to be at  
17 the top of our agenda. And there are challenges for the gas  
18 industry in building these projects. Luckily, financing  
19 doesn't appear to be among them as long as FERC keeps its  
20 regulatory policies as stable as we have. And as long as we  
21 keep running our regulatory process for evaluating the  
22 pipeline infrastructure going the way it has been going for  
23 the most recent future.

24           CHAIRMAN KELLIHER: Commissioner Moeller.

25           COMMISSIONER MOELLER: Thank you, Mr. Chairman.

1 I looked through all my ties and this was the closest one I  
2 came to the blue flame of natural gas.

3 My symbolic attempt to show support for the  
4 natural gas industry, I express thanks to everyone who made  
5 the effort to come her. Sometimes from long distances. I  
6 feel we had a productive discussion. And I do want to talk  
7 about it. We had a lot of initiatives in front of us now  
8 dealing with this industry. So, I think that will disabuse  
9 anyone of the notion that you don't spend significant time  
10 and effort on natural gas.

11 I'll go back to the issue I'm most concerned  
12 about. We are looking at natural gas as our bridge,  
13 potential long bridge for fuel for the next round of  
14 generation. That has implications in the market. I just  
15 hope we're aware of it. It potentially has implications for  
16 reliability. But I want us as a nation, to know what we're  
17 doing as we're going down that road. And you'll hear more  
18 from me on that subject in the future.

19 But thanks to everyone for the effort and for  
20 putting this together. It's been a productive use of time.

21 Thank you, Mr. Chairman.

22 CHAIRMAN KELLIHER: Thank you. I also want to  
23 thank the staff for organizing this conference. And I want  
24 to thank the panelists on this panel and the earlier panels.  
25 I invite you to join us for lunch upstairs.

